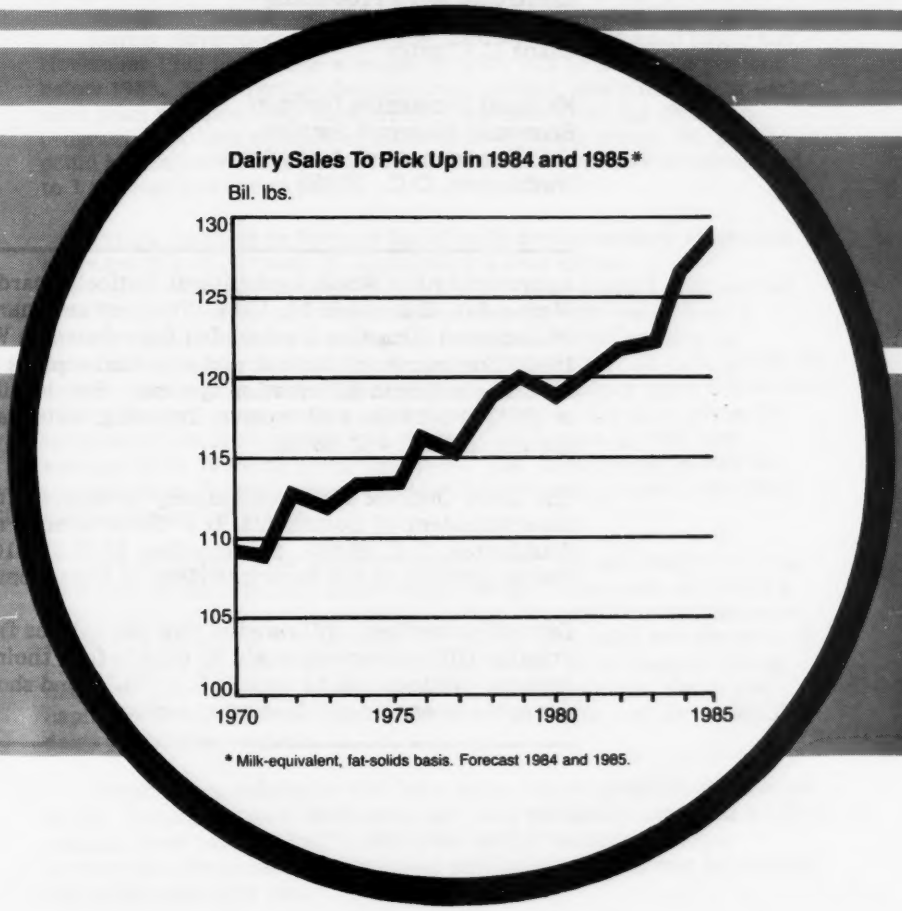
United States
Department of
Agriculture

Economic
Research
Service

DS-399
December 1984

Dairy

Outlook and Situation Report



CONTENTS

Page

5 Production
11 Prices and Income
18 Utilization
26 Foreign Trade and Trends
Special Articles
29 California and Canadian Quota Plans
36 National and Regional Costs and Returns for Producing Milk
39 List of Tables

Principal Contributor
Clifford M. Carman
(202) 447-8636

Statistical Assistant
LaVerne T. Williams
(202) 447-8636

Electronic Word Processing
Debra K. Fitzwater
Diana L. Claytor

National Economics Division
Economic Research Service
U.S. Department of Agriculture
Washington, D.C. 20250

Approved by the World Agricultural Outlook Board. Summary released Wednesday, December 19, 1984. The next summary of the Dairy Outlook and Situation is scheduled for release on Wednesday, March 20, 1985. Summaries of outlook and situation reports are available on several electronic information systems. For details call (402) 472-1892 or (301) 588-1572. Full reports, including tables, are provided by the system on (402) 472-1892.

The Dairy Outlook and Situation may be ordered from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Subscription: $8 U.S., $10 foreign. Make checks payable to the Superintendent of Documents.

Current subscribers will receive renewal notices from the Government Printing Office approximately 90 days before their subscription expires. Notices will be sent ONLY ONCE and should be returned promptly to ensure uninterrupted service.

SUMMARY

In 1985, milk production is expected to be up about 1 percent from 1984, but with reduced farm use, marketings will grow about 2 percent, leaving USDA net removals nearly unchanged at about 8.5 billion pounds (milk-equivalent, fat-solids basis). The relatively large purchases are expected to keep wholesale prices near the anticipated lower Commodity Credit Corporation (CCC) purchase prices. With lower product prices, farm prices are likely to decline, while retail prices remain about unchanged.

During October-November 1984, production fell 4.1 percent from a year earlier and 1 percent below 1982. November marked the 11th month of the 15-month milk diversion program and the 10th consecutive month of year-over-year production declines. The November drop resulted from 2.9 percent fewer cows and a 1.1-percent decrease in output per cow. Total production for 1984 will be about 136 billion pounds, down 3.9 billion (nearly 3 percent), from last year.

The decline in output per cow is expected to moderate during December and early next year. With an improved milk/feed price ratio this fall, dairy farmers may increase grain feeding rates. In 1985, yield per cow is anticipated to move above a year earlier after the diversion program ends. For all of 1985, output per cow is projected to average 1 to 2 percent above this year.

During November, the dairy cow herd was 329,000 head below the November 1983 peak. The average for 1984 will be about 2.4 percent below 1983. Some further declines from current levels may occur early next year; however, cow numbers may increase after the diversion program ends. But because of lower milk (support) prices, the gains could be limited. For all of 1985, milk cow numbers may be unchanged to 1 percent below this year.

Prices received by farmers for all milk during January-November averaged $13.35 per cwt, 20 cents below a year earlier. September-November prices were about 17 cents above a year earlier, but the 1984 average probably will be about 20 cents below 1983's $13.57. The effective all-milk price (adjusted for differences in deductions) may be down about 30 cents. This winter, all-milk prices are expected to remain above a year earlier, but will likely move below them during the spring and remain below for the rest of the year, given the anticipated lower support prices. The all-milk price in 1985 may average 35 to 70 cents lower than 1984. The effective price may be unchanged to 35 cents lower, because the 50-cent-per-cwt deductions stop at the end of March.

Third-quarter 1984 commercial use of all milk and dairy products, on a milk-equivalent, fat-solids basis, was up 1.4 percent, following a strong first-half gain of 4 percent. During January-October, use rose 2.8 billion pounds, or 2.8 percent. For all of 1984, sales are expected to be up about 3 percent. In 1985, commercial use of all dairy products may rise 1 to 4 percent because of additional population, higher per capita incomes, lower real prices for dairy products, and the national dairy promotion program.

Surplus removals under the dairy price support program are sharply lower. During January-November, net CCC purchases exceeded 8 billion pounds, down nearly a half from a year earlier because of larger commercial disappearance and lower milk marketings (lower production and additional farm use).

Table 1.—U.S. dairy situation at a glance

Item	Unit or base period	Quarterly data					
		3rd 1982	3rd 1983	4th 1983	1st 1984	2nd 1984	3rd 1984
Production and cow numbers:							
Total milk	Mil. lb	33,962	35,015	33,825	34,136	35,685	33,640
Milk per cow	Lb	3,078	3,145	3,031	3,112	3,298	3,105
Number of milk cows	Thou.	11,032	11,135	11,158	10,971	10,852	10,836
Prices received by farmers:							
All milk, sold to plants, 100 pounds	Dol	13.37	13.33	13.80	13.40	12.97	13.20
Percentage of parity 1/	Pct	65	61	60	57	57	57
Manufacturing grade milk, 100 pounds	Dol	12.30	12.33	12.87	12.40	12.13	12.30
Parity equivalent	Dol	18.98	20.11	20.26	21.17	21.32	21.32
Fat content	Pct	3.57	3.53	3.85	3.78	3.59	3.54
Minnesota-Wisconsin (3.5% fat), 100 pounds	Dol	12.44	12.49	12.40	12.06	12.08	12.37
Milk eligible for fluid market, 100 pounds	Dol	13.50	13.47	13.97	13.57	13.10	13.40
Price ratio and dairy ration value:							
Milk/16-percent feed price relationship	Lb	1.51	1.41	1.36	1.34	1.31	1.40
Value of concentrate ration fed, milk cows	Dol	7.62	7.80	8.30	8.58	8.32	8.46
Farm cash receipts from dairy products	Mil. dol	4,515	4,634	4,493	4,556	4,633	4,427
Production of factory products:							
Butter	Mil. lb	256.4	260.7	308.2	350.2	292.3	212.6
American cheese, whole milk	Mil. lb	673.2	698.9	677.3	700.0	777.2	622.0
Cheese other than American	Mil. lb	448.1	457.5	518.3	469.4	494.6	483.6
Canned milk, unskimmed	Mil. lb	184.0	167.2	176.6	144.6	173.5	158.4
Dry whole milk	Mil. lb	22.4	27.4	30.6	30.9	32.6	28.3
Frozen products 2/	Mil. gal	346.2	366.4	250.1	271.1	349.2	354.9
Creamed cottage cheese	Mil. lb	191.2	196.1	172.7	182.1	192.4	188.5
Total (milk-equivalent, fat-solids basis) 3/	Mil. lb	19,472	20,180	18,920	19,967	21,281	18,362
Nonfat dry milk, human use	Mil. lb	359.0	370.8	313.2	326.1	362.1	271.5
Wholesale prices:							
Butter, Grade A, Chicago, pound	Ct	148.0	148.7	146.0	141.3	145.3	154.8
Cheese, American (40-pound blocks), f.o.b. Wisconsin assembling points, pound	Ct	137.8	137.7	139.4	135.7	135.9	139.9
Evaporated milk, case	Dol	22.02	22.23	22.23	22.23	22.23	22.23
Nonfat dry milk, pound, f.o.b. Central States, high heat	Ct	93.1	93.4	92.6	90.7	90.7	90.7
Dairy products (BLS)	1967=100	248.8	250.5	250.5	248.5	249.1	252.5
Retail prices (BLS):							
Consumer price index 4/	1967=100	292.8	300.5	303.1	306.4	309.7	313.1
All food 4/	1967=100	287.8	292.3	293.1	301.2	301.9	304.1
All dairy products 4/	1967=100	247.3	250.1	250.1	250.8	251.4	253.3
Fluid milk and cream	12/77=100	135.4	136.3	135.9	136.5	136.6	137.0
Whole milk	1967=100	221.2	222.9	222.1	223.0	223.3	223.7
Other	12/77=100	135.9	136.5	136.4	137.2	137.3	138.0
Manufactured dairy products	12/77=100	146.1	148.5	149.1	149.3	149.7	151.8
Butter	1967=100	251.8	253.8	255.0	254.2	253.6	263.9
Cheese	12/77=100	144.6	146.7	146.6	146.7	146.7	148.4
Frozen desserts	12/77=100	150.1	152.8	154.7	155.2	156.5	158.0
Other	12/77=100	141.0	145.5	145.6	146.4	147.8	148.8
Margarine	1967=100	258.5	258.7	269.1	279.6	282.9	295.3
Stocks, end of quarter:							
Creamery butter	Mil. lb	541.6	589.6	552.3	499.4	529.3	516.7
Cheese total 5/	Mil. lb	994.8	1,213.3	1,314.7	1,266.4	1,298.8	1,288.2
Canned milk, unskimmed	Mil. lb	89.6	76.7	94.9	47.7	54.6	91.2
Dry whole milk	Mil. lb	9.6	5.8	4.4	6.4	5.8	8.6
Total (milk-equivalent, fat-solids basis) 6/	Mil. lb	20,990	24,017	24,294	22,646	23,610	23,332
Nonfat dry milk	Mil. lb	1,132.4	1,401.4	1,419.1	1,394.9	1,421.0	1,421.2
Commercial disappearance:							
Creamery butter	Mil. lb	217.3	217.0	256.6	200.3	243.8	217.7
Cheese, American	Mil. lb	549.4	500.2	545.4	557.6	591.9	575.6
Cheese, other than American	Mil. lb	501.0	521.1	609.4	527.4	554.4	568.4
Canned milk, unskimmed	Mil. lb	164.7	144.5	221.4	134.7	136.2	141.9
Milk in all products	Mil. lb	31,744	32,044	31,753	28,957	32,390	32,481
Nonfat dry milk	Mil. lb	147.1	122.4	121.6	137.0	116.7	147.5
USDA net removals:							
Butter	Mil. lb	42.7	44.3	47.5	143.3	47.2	1.5
Cheddar cheese	Mil. lb	177.3	221.4	129.5	150.6	180.9	81.0
Nonfat dry milk	Mil. lb	229.9	270.3	187.7	205.3	230.2	146.0
Evaporated milk	Mil. lb	6.0	6.8	7.5	7.6	3.6	5.1
Total (milk-equivalent, fat-solids basis)	Mil. lb	2,646	3,117	2,275	4,325	2,740	812

1/ Seasonally adjusted prices as percentage of parity price. 2/ Ice cream, ice milk, and sherbet. 3/ Includes manufactured products for which current data are available. 4/ For all urban consumers starting January 1978. 5/ Natural plus processed American cheese held by CCC. 6/ Excludes cream and bulk condensed milk.

PRODUCTION

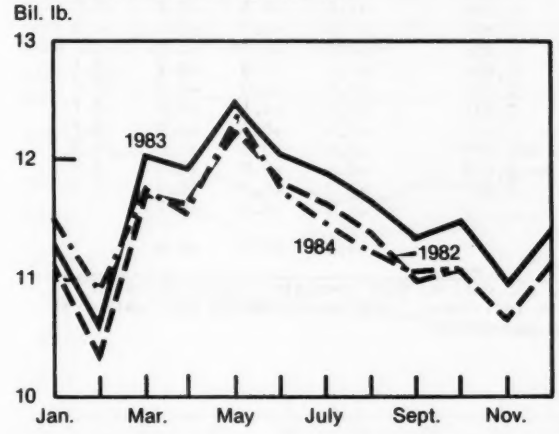
Production Continues Lower

Milk production during calendar 1983 was a record 140 billion pounds, up 4.2 billion (3.1 percent) from 1982. Production posted year-over-year increases of about 3 percent in each quarter of 1983. However, production in each of the first three quarters of 1984 was below a year earlier with July-September down 3.9 percent, and nearly 1 percent below third-quarter 1982.

Milk production for the first 2 months of 1984 was up from a year earlier, with January up 0.1 percent and February up 1.8 percent. February marked the 58th consecutive month of year-over-year increases. However, if adjusted for the extra day due to leap year, February production was down 1.8 percent. Production during October-November was 4.1 percent below 1983 and 1 percent lower than 1982. November marked the 11th month of the 15-month milk diversion program and the 10th consecutive month of year-over-year production declines. The November drop resulted from 2.9 percent fewer cows and a 1.1-percent decrease in output per cow. During January-November, milk production fell 3.5 billion pounds (2.7 percent) from last year.

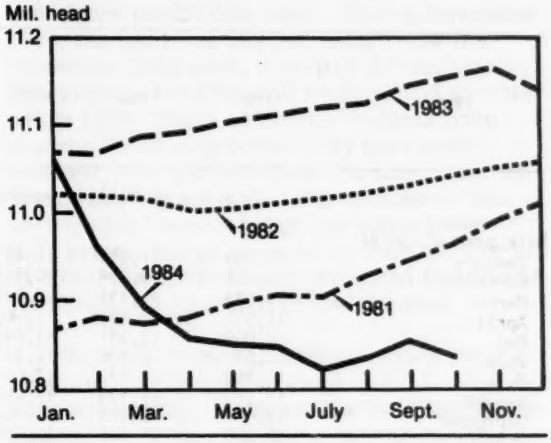
Of the 33 States surveyed during October-November, California, the second biggest producer, was the only one with a gain in production, up 2.1 percent from a year earlier. Meanwhile, production in the other top States was down: Wisconsin 1.5 percent, New York 2.4, Pennsylvania 2.9, Minnesota 6.2, and Michigan 7.

U.S. Milk Production by Months



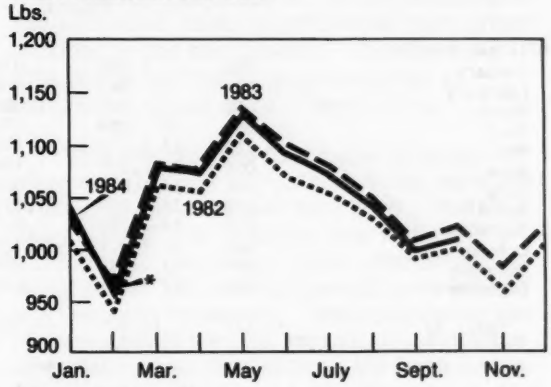
USDA

Milk Cows on Farms



USDA

Milk Production Per Cow



USDA

Milk output per cow increased 2.3 percent in 1983, slightly more than twice the gain for 1982, but approximately equal to the most recent 10-year average of 2.4 percent per year. In general, the year-over-year gains in yields slowed throughout 1983, likely the result of lower effective farm returns for milk marketed after the deduction program started in April 1983 and higher feed costs during second-half 1983.

Table 2.--Milk production, milk per cow, and milk cows on farms, by months, 1981-84, with comparisons

Item	1981	1982	1983	1984 1/	Change from year earlier			
					1981	1982	1983	1984
	----- Million pounds -----				---- Percent ----			
Milk production 2/								
January	10,805	11,121	11,473	11,490	+4.7	+2.9	+3.2	+0.1
February	10,161	10,394	10,725	10,905	+1.9	+2.3	+3.2	+1.7
March	11,549	11,731	12,049	11,741	+5.5	+1.6	+2.7	-2.6
April	11,555	3/ 11,654	11,966	11,674	+4.8	+0.9	+2.7	-2.4
May	12,099	3/ 12,241	12,642	12,283	+3.4	+1.2	+3.3	-2.8
June	11,606	3/ 11,830	12,273	11,832	+2.4	+1.9	+3.7	-3.6
July	11,387	3/ 11,633	12,061	11,570	+2.8	+2.2	+3.7	-4.1
August	11,132	3/ 11,375	11,692	11,243	+3.1	+2.2	+2.8	-3.8
September	10,659	3/ 10,954	11,262	10,827	+3.0	+2.8	+2.8	-3.9
October	10,768	3/ 11,066	11,430	10,942	+2.9	+2.8	+3.3	-4.3
November	10,387	3/ 10,656	11,000	10,564	+3.3	+2.6	+3.2	-4.0
December	10,905	3/ 11,147	11,395		+3.9	+2.2	+2.2	
Total 4/	133,013	135,802	139,968		+3.5	+2.1	+3.1	
	---- Pounds ----				---- Percent ----			
Milk per cow 2/								
January	994	1,008	1,036	1,039	+3.8	+1.4	+2.8	+0.3
February	934	943	969	995	+0.9	+1.0	+2.8	+2.7
March	1,062	1,065	1,086	1,078	+4.5	+0.3	+2.0	-0.7
April	1,061	3/ 1,059	1,079	1,075	+3.7	-0.2	+1.9	-0.4
May	1,110	3/ 1,112	1,138	1,132	+2.4	+0.2	+2.3	-0.5
June	1,064	3/ 1,074	1,104	1,091	+1.3	+0.9	+2.8	-1.2
July	1,044	3/ 1,055	1,084	1,069	+1.9	+1.1	+2.7	-1.4
August	1,018	3/ 1,031	1,051	1,038	+2.1	+1.3	+1.9	-1.2
September	974	3/ 992	1,010	998	+2.0	+1.8	+1.8	-1.2
October	982	3/ 1,001	1,024	1,010	+1.9	+1.9	+2.3	-1.4
November	945	3/ 963	985	974	+2.1	+1.9	+2.3	-1.1
December	990	3/ 1,007	1,022		+2.5	+1.7	+1.5	
Total 4/	12,177	12,309	12,587		+2.4	+1.1	+2.3	
	----- Thousands -----				---- Percent ----			
Milk cows on farms 5/								
January	10,871	11,029	11,075	11,064	+0.9	+1.5	+0.4	-0.1
February	10,881	11,024	11,072	10,958	+1.0	+1.3	+0.4	-1.0
March	10,879	11,020	11,090	10,890	+1.0	+1.3	+0.6	-1.8
April	10,886	3/ 11,005	11,094	10,856	+1.0	+1.1	+0.8	-2.1
May	10,898	3/ 11,008	11,107	10,851	+1.0	+1.0	+0.9	-2.3
June	10,906	3/ 11,015	11,116	10,848	+1.0	+1.0	+0.9	-2.4
July	10,904	3/ 11,026	11,126	10,821	+0.9	+1.1	+0.9	-2.7
August	10,930	3/ 11,031	11,129	10,833	+0.9	+0.9	+0.9	-2.7
September	10,949	3/ 11,040	11,150	10,853	+1.0	+0.8	+1.0	-2.7
October	10,969	3/ 11,055	11,159	10,838	+1.1	+0.8	+0.9	-2.9
November	10,993	3/ 11,066	11,170	10,841	+1.2	+0.7	+0.9	-2.9
December	11,011	3/ 11,071	11,146		+1.4	+0.5	+0.7	
Annual average	10,923	11,033	11,120		+1.0	+1.0	+0.8	

1/ Preliminary. 2/ Excludes milk sucked by calves. 3/ ERS derived data consistent with published official USDA quarterly estimates. No monthly data for an individual State or region are available. 4/ May not add because of rounding. 5/ Excludes heifers not yet fresh.

The slowing turned into a drop in 1984. Output per cow is likely to be down about 0.6 percent from 1983 because of concentrate feeding reductions and other management changes brought about by the diversion program, together with higher feed costs during the first 7 months of 1984. November's drop in output per cow is expected to moderate during December and early next year. With an improved milk/feed price ratio this fall, dairy farmers may increase the rate of grain feeding. In 1985, yield per cow is anticipated to move back above year-earlier levels after the diversion program ends. For all of 1985, output per cow is projected to average 1 to 2 percent above 1984.

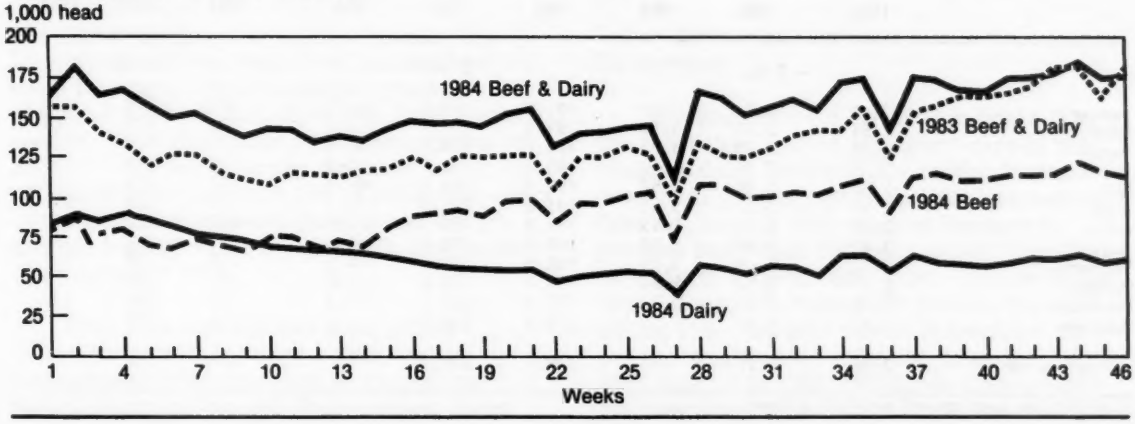
The average number of milk cows on farms increased during 1983, and when combined with gains in 1980, 1981, and 1982, last year was the fourth year that cow numbers increased, the longest period of expansion in the Nation's dairy herd since 1941–44. The average number of milk cows on farms was 0.4 percent larger than a year earlier in January 1983, but nearly 1 percent larger in November. The herd increased in size and at a faster pace in 1983 than a year earlier because of a large number of replacement heifers, the relatively low cull cow price, and the unknown direction of the dairy price support program.

The dairy cow herd dropped sharply from November 1983 to July 1984, but has shown almost no change since midyear. Much of the drop during first-half 1984 was because of increased culling by diversion program participants. However, some nonparticipants also reduced their herds because of lower effective returns per cwt of milk marketed and higher production costs. During November 1984, the herd was 329,000 head below the November 1983 peak, a drop of 2.9 percent. The average for 1984 will be about 2.4 percent below 1983. Some additional declines from current levels may occur early next year; however, cow numbers may increase after the diversion program ends. But because of the anticipated lower support and hence lower milk prices, the gains could be limited. For all of 1985, cow numbers are projected to average unchanged to 1 percent below this year.

With all of the attention on the diversion program, the supply response of nonparticipating producers has been somewhat ignored. In 1983, this group expanded milk output by 5.5 to 6 percent. By mid-1984, these producers as a group had reduced production to about even with a year earlier. If the earlier expansion of the nonparticipants had continued, their growth would have offset declines by the participants. Clearly, lower milk prices and higher feed costs had a dampening effect on milk production.

This year for the first time, federally inspected (FI) cow slaughter is being reported separately for dairy and beef cows. The FI dairy cow kill for January–June was 1.74 million head, implying a total commercial slaughter of 1.81 million (not all cows killed are federally inspected). Assuming death loss at 1 percent (2 percent annually), the number of replacements that entered the herd during January–June 1984 was 1.65 million head, 33.8 percent of the July 1, 1983, inventory. About

Cow Slaughter, Federally Inspected



370,000 additional dairy cows likely went to slaughter during first-half 1984 when compared with first-half 1983.

FI cow slaughter from January through December 1st (48 weeks) totaled 7.5 million head--3 million for dairy and 4.5 for beef--up 15 percent or nearly 1 million head from 1983. For all of 1984, the additional dairy cow slaughter is expected to be only about one-third of the extra cow kills.

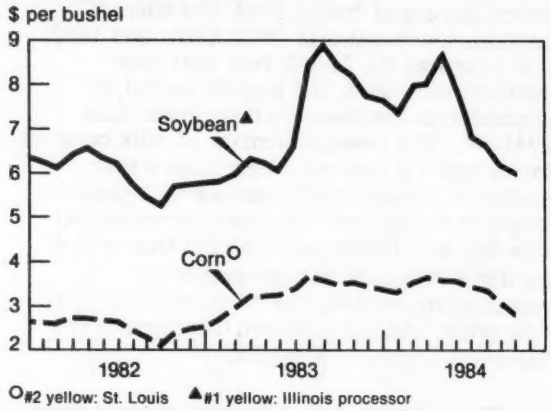
For the rest of 1984 and early in 1985, with cow numbers expected to decline slightly as the drop from a year earlier in output per cow slows, milk production is likely to be down 4 percent from a year earlier. Total production for this calendar year will be about 136 billion pounds, down 3.9 billion (2.8 percent) from 1983. In 1985, after the diversion program ends, yield per cow will likely move above a year earlier, while cow numbers will increase slightly. Calendar 1985 production is expected to be unchanged to 2 percent higher than this year.

Feed Prices Below Last Year

The 1984/85 corn crop, based on November 1 conditions, is forecast at 7.5 billion bushels, up from 4.2 billion in 1983/84. The large crop has put downward pressure on prices and will likely be much larger than use, so carryover stocks are expected to increase sharply. As a result, farm prices of corn will be lower in 1984/85 than last year when the market was dominated by drought and the effects of PIK. Prices at the farm are expected to range from $2.60 to $2.85 per bushel, compared with last year's $3.20.

This year's soybean crop is also expected to exceed use, so stocks will increase. With additional stocks, soybean prices during 1984/85 are likely to be less volatile and lower--ranging from $6 to $7 per bushel, compared with $7.75 in 1983/84. Prices for soybean meal (Decatur) are forecast to average $140 to $160 per ton, down from last year's season average of $188.

Corn and Soybean Prices



USDA

Table 3.--Corn, soybean meal, and 16-percent dairy feed ration prices, 1982-84

Month	Corn, No. 2 St. Louis			Soybean meal, Decatur			16-percent dairy feed		
	1982	1983	1984	1982	1983	1984	1982	1983	1984
	- - - $/bu. - - -			- - - $/ton - - -			- - - $/ton - - -		
January	2.65	2.52	3.41	191.0	179.3	201.9	181	175	205
February	2.61	2.79	3.31	191.0	177.1	184.4	180	177	201
March	2.66	2.99	3.55	183.6	177.3	196.4	179	175	199
April	2.78	3.24	3.61	190.2	186.8	190.0	179	182	199
May	2.78	3.24	3.58	192.4	185.8	187.4	181	184	197
June	2.75	3.27	3.57	183.6	175.5	174.4	179	184	195
July	2.68	3.39	3.43	181.9	189.3	157.6	180	182	192
August	2.42	3.68	3.33	169.0	232.8	151.6	177	189	188
September	2.32	3.60	3.09	160.8	233.6	144.9	173	198	184
October	2.12	3.50	2.84	157.0	228.6	141.6	171	199	179
November	2.43	3.53	2.77	173.4	224.7	135.2	172	205	177
December	2.49	3.45		178.5	218.0		174	205	
Average 1/	2.56	3.27		179.4	200.7		177	188	

1/ Simple average of monthly prices.

Table 4.--Milk/16-percent feed price relationship, by months, 1981-84 1/

Month	1981	1982	1983	1984
	Pounds			
January	1.39	1.55	1.59	1.34
February	1.39	1.54	1.56	1.34
March	1.41	1.52	1.55	1.33
April	1.39	1.51	1.49	1.32
May	1.35	1.46	1.45	1.31
June	1.36	1.46	1.43	1.31
July	1.40	1.47	1.45	1.34
August	1.43	1.49	1.41	1.39
September	1.48	1.56	1.36	1.48
October	1.53	1.61	1.39	1.56
November	1.56	1.62	1.36	1.59
December	1.54	1.60	1.34	
Average	1.44	1.53	1.45	

1/ Pounds of 16-percent protein ration equal in value to 1 pound of milk.

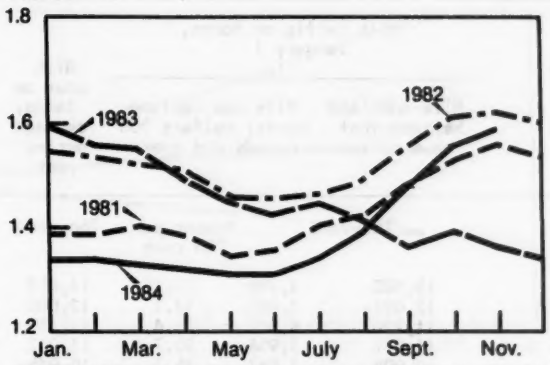
Table 5.--Utility cow prices, Omaha, by months, 1981-84

Month	1981	1982	1983	1984
	Dollars per cwt			
January	41.61	36.64	36.94	33.26
February	43.65	38.11	40.92	39.69
March	43.12	39.41	42.36	44.01
April	43.95	41.26	43.04	42.88
May	42.39	43.40	42.98	42.17
June	42.88	42.73	42.26	42.16
July	43.78	42.52	41.14	41.48
August	44.31	42.62	39.63	40.86
September	42.47	41.52	37.75	39.20
October	40.60	39.28	37.42	38.57
November	37.70	36.58	34.14	36.86
December	36.65	35.41	33.58	
Average	41.93	39.96	39.35	

The average price paid by farmers for 16-percent protein dairy feed has declined since last year. Mid-November prices averaged $177 per ton, down $28 from a year earlier. With November milk prices higher by 20 cents, the dairy farmer was able to buy 159 pounds of grain for each cwt of milk sold--up 23 pounds (16.9 percent) from a year earlier and the highest value for the milk/feed ratio since January 1983.

With corn and soybean meal prices expected to remain below a year earlier through mid-1985, the cost of 16-percent protein dairy ration will likely remain lower

Milk/16-Percent Feed Price Relationship*



*Pounds of 16% protein ration equal in value to one pound of milk sold to plants and dealers.

USDA

than a year earlier at least until next summer. Meanwhile, milk prices, which are higher now, are expected to fall below year-earlier levels by spring. As a result, the milk/feed ratio will be higher than a year earlier during first-half 1985. Dairy ration prices and the milk/feed ratio during the second half will be affected by the size of next year's crops.

Over much of the country, forage supplies are better than a year ago. For the 48 contiguous States, the pasture and range feed conditions index on November 1 was 74, 1 point above last year, but 1 point below the 1973-82 average for the date. The 1984 hay crop is estimated at 154 million tons, up 9 percent from last year and the highest on record. Although the hay crop was record large, hay stocks have been pulled down by supplemental feeding this summer and fall.

Labor Efficiency Continues To Improve

Preliminary data for 1983 indicate that the total time needed for direct care of the Nation's dairy herd was 301 million hours, down nearly 9 percent from 1982. Direct care does not include time used by farmers to produce feed, care for replacement animals, or perform general farm work. The decreased time, along with more milk cows in the herd during 1983, lowered the time spent per cow per day to about 4.4 minutes, down from 4.9 in 1982 and 5.4 in 1981. With less time needed per cow (because of labor-saving technologies)

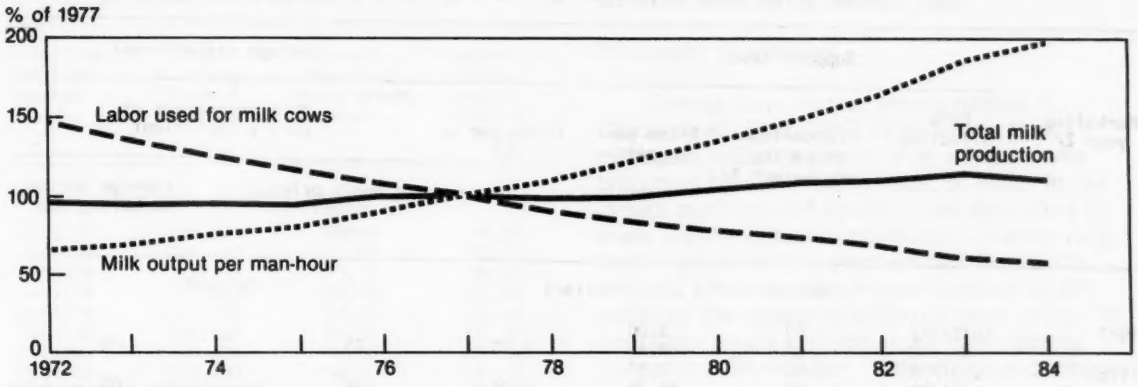
Table 6.--U.S. milk production and factors affecting supply, selected years, 1965-84

Year	Milk cattle on farms, January 1			Milk cows on farms, average during year	Milk production		Average prices received by farmers per cwt		
	Milk cows and heifers that have calved	Milk cow replacements; heifers 500 pounds and over			Per cow	Total	All milk, wholesale	Milk eligible for fluid market	Milk, manufacturing grade
	Thousand		Number per 100 cows	Thousand	Pounds	Million	Dollars per pounds		
1965	15,380	4,780	31.1	14,953	8,305	124,180	4.23	4.63	3.34
1970	12,091	3,880	32.1	12,000	9,751	117,007	5.71	6.05	4.70
1975	11,220	4,087	36.4	11,139	10,360	115,398	8.75	9.02	7.63
1976	11,071	3,956	35.7	11,032	10,894	120,180	9.66	9.93	8.56
1977	10,998	3,887	35.3	10,945	11,206	122,654	9.72	9.96	8.70
1978	10,896	3,886	35.7	10,803	11,243	121,461	10.58	10.79	9.65
1979	10,790	3,932	36.4	10,743	11,488	123,411	12.03	12.23	11.09
1980	10,779	4,158	38.6	10,810	11,889	128,525	13.05	13.21	12.05
1981	10,860	4,345	40.0	10,923	12,177	133,013	13.76	13.94	12.73
1982	11,012	4,532	41.2	11,033	12,309	135,802	13.59	13.73	12.66
1983 1/	11,066	4,533	41.9	11,120	12,587	139,968	13.57	13.72	12.63
1983 2/	11,140	4,541	40.8	10,875	12,505	136,100	13.38	13.56	12.44

Year	Dairy ration cost		Milk cow cost		Grain and other concentrates fed to milk cows			Dairy pasture feed conditions, as percent of normal	Alfalfa hay prices	
	Value per 100 pounds	Milk/feed price relationship 3/	Price received per head	Milk required to buy a cow	Total fed	Per cow	Per cwt of milk produced		Received by farmers per ton	Utility cow prices per cwt
	Dollars	Pounds	Dollars	Cwt	Thousand tons	Pounds	Pounds	Percent	Dollars	
1965	3.03	1.18	212	50	22,827	2,953	36.7	80	25.00	14.44
1970	3.28	1.53	332	58	24,870	3,979	42.4	81	24.70	21.32
1975	6.25	1.31	412	47	24,274	4,357	42.1	79	54.38	21.09
1976	6.30	1.37	477	49	25,083	4,545	41.7	70	60.81	25.31
1977	6.20	1.39	504	52	25,518	4,709	42.1	72	60.57	25.32
1978	6.08	1.53	675	64	26,018	4,803	42.8	76	52.25	36.79
1979	6.68	1.55	1,040	86	27,207	5,070	44.1	82	60.37	50.10
1980	7.42	1.48	1,190	91	28,433	5,260	44.2	70	72.00	45.73
1981	8.02	1.44	1,200	87	28,513	5,220	42.9	79	70.90	41.93
1982	7.45	1.53	1,110	82	29,661	5,380	43.7	83	73.73	39.96
1983 1/	7.88	1.45	1,020	75	30,229	5,440	43.2	77	80.23	39.35
1984 2/	8.11	1.41	900	66	28,820	5,300	42.4	74	81.10	39.80

1/ Preliminary. 2/ Preliminary or estimated. 3/ Pounds of 16-percent protein ration equal in value to 1 pound of milk.

Labor Efficiency on Dairy Farms*



*1983 preliminary, 1984 estimated.

USDA

and given that each cow had larger output, the dairy laborer's efficiency (milk production per hour of labor) increased about 13 percent in 1983, following gains of 10.7 percent in 1981 and 10.4 in 1982. The 1983 output per man-hour was more than 166 percent higher than a decade ago. Labor efficiency in 1984 is expected to be up about 6.5 percent, half the 1983 rate due to lower yields per cow.

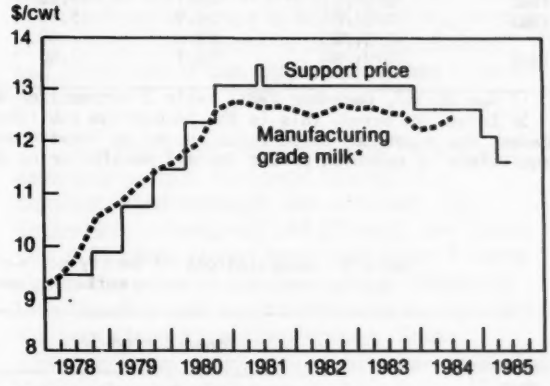
PRICES AND INCOME

Current Price Support Lower

As required by law, USDA set the support price for milk at $12.60 per cwt on December 1, 1983. That will be the level of support until September 30, 1985. However, if the Secretary of Agriculture estimates on April 1, 1985, that projected CCC purchases for the next 12 months would exceed 6 billion pounds, milk equivalent, the support price could be reduced by 50 cents per cwt. An additional 50-cent-per-cwt cut in the support level could be made on July 1, 1985, if purchases were projected to exceed 5 billion pounds during July 1, 1985 to June 30, 1986.

The law includes a mandatory deduction of 15 cents per cwt for dairy product promotion, research, and nutrition education, but allows up to 10 cents credit for qualifying State or regional promotion programs. An order implementing the promotion program was issued in late March and deductions for the program started on May 1. Promotions under this program started in early

Support and Manufacturing Milk Price



*Adjusted to a fat test of 3.67 percent

USDA

September. To continue after September 30, 1985, the program must be approved by dairy farmers.

The law contains a mandatory 50-cents-per-cwt deduction on all milk marketed from December 1, 1983, to March 31, 1985, to encourage production that is in line with demand. Revenues collected will be used to help fund the paid diversion program.

The paid diversion program started January 1, 1984. The payment rate is $10 per cwt for reductions in marketings of 5 to 30 percent from calendar 1982 marketings, or the average of calendar 1981 and 1982 marketings, whichever participating producers chose as their base. Producers who contracted had to sign up by January 31, 1984, for the 15-month program.

Table 7.--Manufacturing milk: Comparisons of announced support prices and U.S. average market prices paid to producers, marketing years, 1977-84 1/

Marketing year 2/	Support level			Average market level		
	Date effective	Percentage of parity equivalent 3/	Price per cwt	Price per cwt	As a percentage of parity equivalent	
					In month prior to marketing year	Average during marketing year
		Percent	Dollars		Percent	
1977	10/01/77	82	9.00			
	4/1/78	86	9.43	9.30	85	79
1978	10/01/78	80	9.87			
	4/01/79	87	10.76	10.86	88	80
1979	10/01/79	80	11.49			
	4/1/80	87	12.36	11.75	82	76
1980	10/01/80	80	13.10	12.71	78	73
1981	10/01/81	75	13.49			
	10/21/81	72.9	13.10	12.66	70	68
1982	10/01/82	69.1	13.10	12.66	67	64
1983	10/01/83	64.9	13.10			
	12/01/83	62.4	12.60	12.42	61	59
1984	10/01/84	59.1	12.60			

1/ See DS-387, December 1981, table 2 for earlier data. 2/ Start of marketing year October 1. 3/ Except as noted, this is the percentage published in month before the marketing year. In some cases, the announced percentages, based on forward estimates of parity, were slightly different. Parity equivalent is based on prices for all manufacturing grade milk.

Table 8.--Computations of parity equivalents for U.S. manufacturing milk, per cwt, marketing years, 1977-84 1/

Marketing year 2/	Base period 3/			Adjusted base price 5/	Parity 4/		
	All milk wholesale	Manufacturing grade milk	Ratio		Index (1910-14=100)	Prices	
						All milk wholesale	Equivalent of manufacturing milk grade
	Dollars		Percent	Dollars		Dollars	
1977	6.75	5.72	84.7	1.88	685	12.90	10.93
1978	7.22	6.18	85.6	1.90	756	14.40	12.33
1979	7.74	6.73	87.0	1.91	862	16.50	14.36
1980	8.40	7.39	88.0	1.91	972	18.60	16.37
1981	9.13	8.13	89.0	1.94	1,042	20.20	17.98
1982	9.92	8.91	89.8	1.96	1,077	21.10	18.95
1983	10.67	9.67	90.6	2.01	1,108	22.30	20.20
1984	11.31	10.30	91.1	2.06	1,134	23.40	21.32

1/ See DS-387, December 1981, table 4 for earlier data. 2/ Start of marketing year October 1. 3/ For the 10 calendar years immediately preceding. 4/ Immediately preceding start of marketing year. 5/ A 120-month average of farm prices for all wholesale milk divided by a 120-month average of the index of prices received by farmers (both adjusted for supplemental payments) ending with December of previous year. Actual price received during 1910-14 was $1.61.

Table 9.--USDA purchase prices under dairy price-support programs, 1977-84 1/

Effective date of change	Butter at Chicago, Grade A or higher	Nonfat dry milk, extra grade, spray	Natural cheddar cheese, Grade A or higher
	Cents per pound		
10/01/77	100.710	68.00	98.00
4/01/78	106.710	71.00	103.25
10/01/78	111.300	73.75	106.00
4/01/79	121.800	79.00	116.00
10/01/79	131.330	84.00	124.00
4/01/80	140.580	89.50	132.50
10/01/80	149.000	94.00	139.50
10/01/81	153.000	96.50	143.25
10/21/81	149.000	94.00	139.50
10/01/82	149.000	94.00	139.50
10/01/83	149.000	94.00	139.50
12/01/83	143.250	91.00	134.75
10/01/84	143.250	91.00	143.75

1/ Prices for bulk containers--butter, 64- and 68-pound packages; nonfat dry milk, nonfortified in 50-pounds bags; and cheese, 40- or 60-pound blocks. See DS-387, December 1981, table 3 for earlier data.

Nearly 38,000 dairy farmers signed contracts with USDA to reduce their marketings. They signed up for a total milk diversion of 7.5 billion pounds during calendar 1984, 5.5 percent of 1983 marketings and 22.9 percent of their base. However, because some participants were eligible for program payments for cuts in marketings made by the end of 1983, actual diversions in 1984 are estimated at about 5.3 billion pounds, 3.9 percent of 1983 marketings.

Milk diversion checks for January-March and April-June that were cashed and processed through September totaled $335.2 million. The contracted payments for the first two quarters were for $386.8 million. Thus, 87 percent of the January-June expected payments had been made by the end of September.

Deductions from producers for milk marketings beginning December 1, 1983, totaled about $500 million through September. For that time peroid, deductions exceeded payments, but estimates indicate that over the life of the diversion program, deductions and payments will be nearly equal. While the $10-per-cwt diversion payments will be funded almost entirely from the 50-cent-per-cwt deductions, the cost of the dairy price support program is still expected to be about $1.5 billion per year.

Wholesale Prices Fall

During June, butter prices (Grade A, Chicago) advanced to 3 cents above the minimum sellback price. This advance was triggered by a certain amount of panic in the cream markets and could not be supported by basic supply-demand conditions. During July, butter prices fell to year-earlier levels. In August, prices again advanced, rising 12.35 cents to the minimum sellback level of 157.75 cents per pound and remained there during September-November. Butter prices during early December moved sharply lower to 3 cents below the current purchase price of 143.25 cents per pound. The sharp drop reflects the change from relatively tight supplies to more than ample levels now that most holiday ordering is done. In 1985, butter prices will likely move lower in March-April and June-July if the support purchase price is reduced.

The price of Cheddar cheese (Wisconsin assembly points, 40-pound blocks) also demonstrated strength this summer. The September average of 144.29 cents per pound was 8.25 cents above June, and about 5 cents above the support purchase price. Prices in late October and early November moved about 4.5 cents lower than September. Some additional downward movement appears likely before the end of the year. Like butter, cheese prices will likely move lower near April 1 and July 1.

Nonfat dry milk prices (Central States area, high heat) moved up in November to about 1 cent per pound above the CCC purchase price. With dry buttermilk and dry whey supplies somewhat limited from a year earlier due to reduced production of butter and cheese, nonfat dry milk prices may remain slightly above the purchase price until late winter. Like butter and Cheddar cheese, nonfat dry milk prices are expected to move lower at the end of the winter and spring quarters.

The Bureau of Labor Statistics (BLS) wholesale price index for all dairy products in November was 257.4 (1967=100), 2.4 percent above a year earlier. During January-November, the wholesale dairy index

Table 10. - Wholesale dairy product prices and indexes, by months, 1981-84

Year and month	Butter, Grade A, Chicago	Cheese, 40-lb blocks Wisconsin assembly points	Nonfat dry dry milk, Central States, high heat	Wholesale price index (all dairy products)	Fresh whole milk	Butter	Cheese	Ice cream
	- - - Cents per lb. - - -				- - - 1967=100 - - -			
1981								
January	147.25	139.32	93.39	244.7	193.6	223.7	309.0	230.7
February	147.25	139.25	93.31	245.0	194.0	224.0	308.3	231.2
March	147.25	138.75	93.12	245.1	194.3	244.3	308.2	231.2
April	147.25	139.16	93.12	245.8	194.6	224.4	310.9	232.2
May	147.31	138.82	92.90	244.6	192.9	244.4	308.8	233.4
June	147.50	138.80	92.62	245.2	194.1	224.6	308.7	233.4
July	147.94	138.60	92.62	245.1	194.3	224.8	307.3	233.6
August	148.03	139.26	92.83	245.3	194.2	224.8	308.5	233.6
September	148.54	139.69	93.12	245.5	194.2	226.1	309.1	233.6
October	150.57	140.94	93.57	247.4	195.5	229.6	312.0	233.6
November	148.88	141.31	93.38	246.9	195.5	230.7	310.2	233.6
December	148.12	139.41	93.38	247.2	195.7	225.7	311.9	233.9
Average	147.99	139.44	93.11	245.6	194.4	225.6	309.4	232.8
1982								
January	147.53	138.31	93.25	247.7	196.5	225.6	312.3	233.9
February	147.47	137.38	93.12	248.0	196.8	227.2	312.3	233.9
March	147.78	137.38	93.49	248.0	197.1	227.6	312.5	232.0
April	147.35	137.38	92.95	248.4	197.4	225.9	312.3	235.7
May	147.25	136.88	92.88	248.5	197.8	225.8	312.3	235.7
June	147.29	137.38	93.12	248.7	197.8	225.8	313.4	235.7
July	147.59	137.38	93.12	248.6	198.1	225.9	312.3	235.1
August	148.07	137.76	93.12	248.8	198.2	227.4	315.8	235.1
September	148.35	138.13	93.12	249.1	198.1	227.9	312.5	238.3
October	147.44	140.28	93.12	250.0	198.3	227.9	316.2	238.3
November	148.18	140.64	93.15	250.2	198.7	227.1	315.5	238.3
December	147.94	140.36	93.38	250.8	199.6	228.5	312.5	238.3
Average	147.69	138.27	93.15	248.9	197.9	226.9	313.3	235.9
1983								
January	147.25	139.33	93.38	250.7	199.7	226.1	315.7	238.3
February	147.25	138.38	93.38	250.9	199.9	226.4	315.0	239.7
March	147.25	137.96	93.38	250.7	199.8	226.4	314.3	239.7
April	147.25	137.64	93.38	251.0	200.1	266.4	314.4	240.8
May	147.25	137.38	93.38	250.9	199.9	226.4	314.1	240.8
June	147.31	137.38	93.38	250.4	199.6	226.4	313.3	239.1
July	147.25	137.00	93.38	250.4	199.6	226.4	313.5	239.0
August	147.75	137.05	93.38	250.4	199.6	226.8	313.2	239.5
September	151.02	139.17	93.38	250.6	199.3	229.2	314.2	239.6
October	147.59	140.65	93.38	251.3	199.7	228.5	315.1	240.3
November	147.25	140.70	93.38	251.4	199.8	228.5	316.2	240.8
December	143.13	136.72	91.10	248.9	199.6	221.0	309.6	240.1
Average	147.30	138.28	93.19	250.6	199.7	266.5	314.1	239.8
1984								
January	140.44	135.79	90.75	248.4	199.9	218.8	307.5	240.4
February	141.25	135.47	90.75	248.4	199.5	219.2	307.6	242.5
March	142.11	135.88	90.75	248.8	199.6	220.2	308.3	243.6
April	142.94	135.88	90.75	248.9	199.4	220.2	308.4	245.6
May	142.92	135.88	90.75	248.9	199.3	221.3	308.8	244.9
June	150.04	136.02	90.75	249.6	199.6	227.3	308.7	244.2
July	155.55	136.71	90.75	251.4	199.5	242.1	309.9	248.3
August	150.61	138.59	90.75	251.0	199.6	227.2	312.4	246.0
September	158.12	144.29	90.75	255.2	201.5	241.3	317.8	253.1
October	158.12	143.78	90.75	256.7	203.7	243.1	318.2	251.2
November	158.12	139.72	91.75	257.4	206.0	243.3	315.2	248.7

Table 11. - Retail price indexes, for all urban consumers, by months, 1981-84

Year and month	Consumer price index	All food	All dairy products	Fluid milk and cream	Whole milk	Other fluid items	Manufactured dairy products	Butter	Cheese	Frozen desserts	Other manufactured
		1967=100		12/77=100	1967=100	12/77=100	12/77=100	1967=100		12/77=100	
1981											
January	260.5	268.6	240.1	133.0	218.2	132.1	139.6	242.7	138.2	143.6	133.3
February	263.2	270.8	242.1	134.0	219.3	134.0	140.8	242.2	139.2	145.9	134.5
March	265.1	272.2	242.6	134.3	219.9	134.4	141.1	243.0	139.8	145.3	135.1
April	266.8	272.9	243.5	134.6	220.4	134.5	142.0	244.3	140.6	146.7	135.7
May	269.0	272.5	243.8	134.9	220.8	134.7	141.9	245.2	140.5	146.2	136.1
June	271.3	273.6	243.8	134.8	220.7	134.6	142.0	245.1	140.5	146.4	136.3
July	274.4	276.2	244.2	134.9	220.7	134.9	142.5	245.8	140.7	147.6	136.6
August	276.5	277.4	243.8	134.5	220.2	134.2	142.5	246.2	140.8	147.9	135.6
September	279.3	278.0	244.3	134.7	220.0	135.4	143.0	247.1	140.8	148.7	137.3
October	279.9	277.6	244.6	134.7	220.2	135.2	143.3	247.2	140.9	149.9	137.0
November	280.7	277.1	245.0	134.9	220.8	134.9	143.5	248.0	141.1	149.3	138.7
December	281.5	277.8	245.5	135.2	221.2	135.3	143.9	248.7	141.0	150.3	139.7
Average	272.4	274.6	243.6	134.5	220.2	134.5	142.2	245.5	140.3	147.3	136.3
1982											
January	282.5	281.0	245.8	135.1	221.2	135.1	144.4	249.3	142.0	150.8	138.4
February	283.4	283.3	246.5	135.5	221.5	135.8	144.8	248.9	142.8	150.0	140.0
March	283.1	283.0	246.5	135.3	221.7	135.1	144.9	250.1	143.3	149.5	139.5
April	284.3	283.9	247.5	135.9	222.2	136.2	145.6	250.1	143.7	150.9	139.9
May	287.1	285.5	247.0	135.7	222.0	135.7	145.2	251.1	144.0	148.7	139.7
June	290.6	287.8	246.3	135.2	221.3	135.4	144.9	250.9	143.2	149.6	138.7
July	292.2	288.5	247.5	135.6	221.6	136.2	145.9	251.1	144.2	150.4	141.3
August	292.8	287.4	247.5	135.4	221.2	136.0	146.3	252.1	144.8	150.6	140.7
September	293.3	287.6	247.0	135.1	220.8	135.6	146.1	252.2	144.9	149.3	141.1
October	294.1	287.0	247.1	135.0	220.8	135.3	146.2	252.6	144.7	150.4	141.0
November	293.6	286.4	247.4	135.1	220.9	135.4	146.6	252.5	144.5	152.4	140.9
December	292.4	286.5	247.8	135.5	221.9	135.2	146.6	252.1	144.6	151.8	141.7
Average	289.1	285.7	247.0	135.4	221.4	135.6	145.6	251.1	143.9	150.4	140.2
1983											
January	293.1	288.1	249.5	136.7	223.7	136.9	147.1	253.4	145.2	152.5	141.6
February	293.2	289.0	249.7	136.7	223.4	137.3	147.4	253.6	145.5	153.1	141.6
March	293.4	290.5	249.6	136.8	223.4	137.7	147.2	253.5	145.5	150.7	143.9
April	295.5	291.9	250.1	136.6	233.5	136.7	148.1	253.9	146.5	152.0	144.5
May	297.1	292.4	250.3	136.5	223.2	136.8	148.6	254.4	146.5	153.6	144.6
June	298.1	292.0	249.8	136.3	222.9	136.8	148.1	252.7	146.0	154.0	143.1
July	299.3	292.0	249.8	136.2	222.8	136.4	148.2	253.3	146.9	151.6	144.5
August	300.3	292.2	250.2	136.5	223.2	136.8	148.4	254.2	146.4	152.5	145.9
September	301.8	292.6	250.2	136.1	222.6	136.4	149.0	253.9	146.8	154.4	146.0
October	302.6	292.9	250.1	135.9	221.9	136.6	149.2	256.2	146.7	154.9	145.2
November	303.1	292.5	250.2	135.9	222.1	136.4	149.3	254.8	146.8	155.3	145.7
December	303.5	293.9	249.9	135.9	222.3	136.2	148.8	254.1	146.4	154.0	146.0
Average	298.4	291.7	249.9	136.3	222.9	136.7	148.3	254.0	146.3	153.2	144.4
1984											
January	305.2	299.4	250.8	136.4	222.7	137.3	149.3	254.7	147.0	154.8	146.1
February	306.6	302.1	250.9	136.6	223.3	137.0	149.3	253.4	146.8	155.6	146.2
March	307.3	302.2	250.8	136.5	222.9	137.3	149.2	254.4	146.3	155.3	146.9
April	308.8	302.3	251.5	136.8	223.7	137.3	149.6	252.4	146.6	156.4	148.2
May	309.7	301.4	251.0	136.5	223.0	137.3	149.4	254.2	146.2	156.6	146.8
June	310.7	302.0	251.7	136.6	223.2	137.3	150.2	254.1	147.4	156.6	148.5
July	311.7	303.2	252.2	136.7	223.3	137.5	150.8	261.2	147.9	155.8	148.3
August	313.0	304.8	252.7	136.7	223.2	137.7	151.5	264.4	148.2	157.4	148.1
September	314.5	304.2	254.9	137.7	224.7	138.7	153.1	266.0	149.1	160.9	149.9
October	315.3	304.4	256.1	138.7	226.8	139.0	153.3	268.0	149.5	160.0	150.0

Table 12. - Retail dairy product prices, by months, 1981-84

Year and month	Milk, fresh, whole 1/	Milk, fresh, skim	Milk, fresh, lowfat	Butter, salted, Grade AA, sticks	Ice cream, prepackaged, bulk, regular	Yogurt, natural fruit-flavored
	- - - per 1/2 gallon - - -			- - - per 1/2 gallon - - -		
1981						
January	1.104	.954	1.070	1.992	1.938	.491
February	1.106	.959	1.071	1.977	2.019	.508
March	1.113	.962	1.076	2.003	1.992	.498
April	1.116	.974	1.070	1.991	2.024	.492
May	1.118	.975	1.067	1.991	2.008	.499
June	1.119	.980	1.065	1.989	2.006	.489
July	1.118	.980	1.058	1.992	2.024	.504
August	1.117	.981	1.064	1.998	2.014	.498
September	1.117	.977	1.053	1.997	2.042	.494
October	1.124	.988	1.060	1.997	2.032	.511
November	1.127	.988	1.068	1.996	2.028	.509
December	1.129	.991	1.063	1.995	2.064	.511
Average	1.117	.976	1.065	1.993	2.016	.500
1982						
January	1.134	.988	1.072	2.019	2.128	NA
February	1.130	.996	1.060	2.029	2.075	NA
March	1.127	.965	1.057	2.040	2.061	.499
April	1.127	.983	1.065	2.050	2.089	.499
May	1.129	.969	1.058	2.054	2.043	.495
June	1.122	.964	1.056	2.052	2.060	.480
July	1.123	.978	1.064	2.057	2.092	.513
August	1.122	.983	1.064	2.057	2.095	.511
September	1.116	.972	1.063	2.060	2.105	.506
October	1.121	.979	1.064	2.056	2.136	.508
November	1.117	.986	1.063	2.050	2.187	.507
December	1.126	.984	1.062	2.026	2.163	.513
Average	1.124	.979	1.062	2.046	2.103	.503
1983						
January	1.134	.993	1.068	2.048	2.179	.514
February	1.133	.990	1.077	2.059	2.139	.499
March	1.133	.992	1.075	2.063	2.091	.509
April	1.133	.980	1.082	2.066	2.107	.505
May	1.128	.986	1.086	2.072	2.140	.511
June	1.127	.984	1.086	2.072	2.141	.493
July	1.127	.985	1.086	2.069	2.122	.510
August	1.130	.988	1.082	2.065	2.135	.525
September	1.127	.994	1.074	2.071	2.193	.533
October	1.120	.988	1.056	2.100	2.249	.529
November	1.124	.983	1.057	2.061	2.214	.520
December	1.123	.975	1.060	2.043	2.184	.521
Average	1.128	.986	1.074	2.066	2.158	.514
1984						
January	1.124	.999	1.067	2.055	2.189	.522
February	1.122	.995	1.072	2.035	2.191	.517
March	1.121	1.000	1.068	2.057	2.171	.532
April	1.126	1.013	1.073	2.041	2.210	.542
May	1.124	1.005	1.074	2.058	2.203	.523
June	1.121	.999	1.067	2.054	2.193	.534
July	1.125	1.003	1.059	2.112	2.212	.529
August	1.118	1.018	1.054	2.136	2.232	.513
September	1.126	1.028	1.058	2.171	2.301	.524
October	1.132	1.021	1.058	2.180	2.259	.527

1/ Vitamin fortified. NA = Not available.

Table 13.--Whole milk: Prices and farm-to-retail spread, 1984

Year and month	Retail price	Farm value	Farm-retail spread	Change from 1983	Farmers' share
	$ per 1/2 gallon			Percent	
1984					
Jan.	112.4	59.6	52.8	-2	53
Feb.	112.2	57.6	54.6	+2	51
Mar.	112.1	57.4	54.7	+2	51
Apr.	112.6	57.4	55.2	+3	51
May	112.4	57.5	54.9	+3	51
June	112.1	57.4	54.7	+2	51
July	112.5	57.3	55.2	+3	51
Aug.	111.8	57.4	54.4	+1	51
Sept.	112.6	57.8	54.4	+2	51
Oct.	113.2	58.3	54.9	+4	52

averaged 251.3, nearly unchanged from the same period in 1983. In 1985, the index is expected to range from 1 percent lower to 1 percent higher than this year.

Retail Dairy Prices Up Slightly

The BLS retail price index for all dairy products stood at 256.1 (1967=100) in October, up 2.4 percent from a year earlier. In contrast, the all-food index was up 3.9 percent, while all retail prices were 4.2 percent higher. Retail dairy prices in November-December are expected to be up about 2.5 percent from 1983, leaving the average at about 253.3 for this year, a gain of 1.4 percent from 1983. Retail prices for all foods in 1984 are expected to average about 4 percent higher. In 1985, retail prices of dairy products are projected to be unchanged to 2 percent higher, all food items will range from 2 to 5 percent higher, and all retail items may be 3 to 7 percent more.

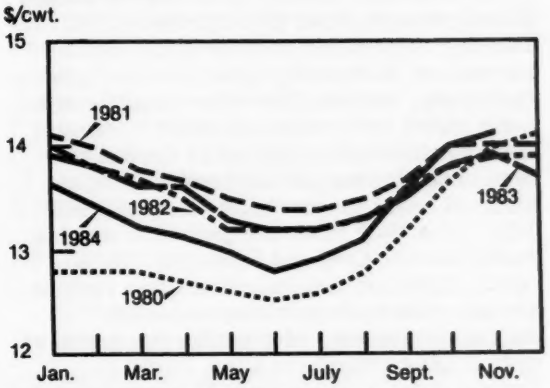
Farm Milk Prices Improve

Milk prices received by farmers in August were below a year earlier, but the difference was only about one-third of that in April. During November, milk prices were slightly above last year, and are expected to remain above year-earlier levels until March.

Reported U.S. manufacturing grade milk prices received by farmers during September-November averaged $12.90 per cwt, 10 cents above the same period in 1983. In contrast, the average during June-August was down 23 cents and during January-May it fell short by 40 cents. This fall and winter, Grade B prices are expected to average about the same to 30 cents higher than a year earlier. For all of 1984, the average is anticipated to be about $12.45 per cwt, down nearly 20 cents from 1983. In calendar 1985, with lower support prices on April 1 and July 1, the average will likely be down 50 to 80 cents per cwt.

Minimum Class I prices in Federal order markets moved sharply higher to $14.82 per cwt in November, reflecting the 34-cent increase in the Minnesota-Wisconsin (M-W) price for manufacturing grade milk in September. During December, Federal order Class I prices were unchanged from the

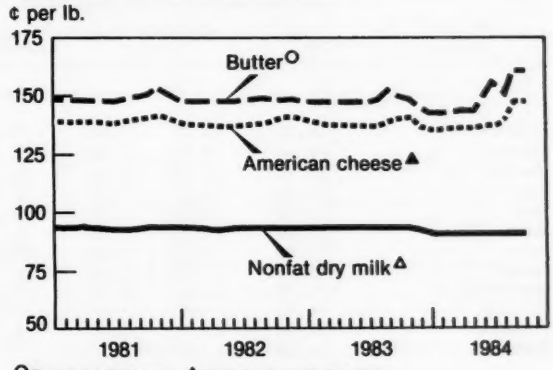
All Milk Prices*



*U.S. average price received by farmers for deliveries to plants and dealers.

USDA

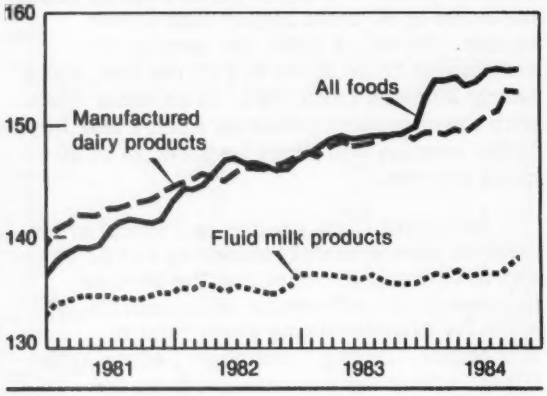
Wholesale Dairy Product Prices



○Grade AA Chicago. △High-heat, central-states. ▲40-lb. block, Wisconsin assembly points.

USDA

Retail Food and Dairy Product Prices
Dec. 1977 = 100



USDA

previous month. For the year, they averaged $14.40 per cwt, down 29 cents from 1983. In January, they should average close to $14.90 per cwt, an alltime high and 18 cents higher than a year earlier. This winter and through early spring 1985, minimum Class I prices in Federal orders are expected to decline but remain above year-earlier levels. With an assumed lower support level on April 1 and July 1, the M-W price is expected to decline during March-April and June-July. As a result, minimum Federal order Class I prices are expected to drop in May-June and August-September. Meanwhile, the average over-order payments on Class I milk in Federal order markets were 81 cents per cwt during December, up from 52 cents a year earlier. Over-order payments ranged from 50 cents (in January) to 81 cents and averaged 64 cents this year, up 6 cents from 1983.

Prices received by farmers for all milk during January-November averaged $13.35 per cwt, 20 cents below a year earlier. Milk prices have strengthened--September-November prices were about 17 cents above a year earlier--but the 1984 average will be about 20 cents below 1983's $13.57. The effective all-milk price (adjusted for differences in deductions) may be down about 30 cents this year. This winter, reported all-milk prices are expected to remain above a year earlier, but will likely move below during the spring and remain below for the rest of the year, based on the anticipated lower support prices. The all-milk price in 1985 may average 35 to 70 cents lower than 1984. The effective price may be unchanged to 35 cents lower, because the 50-cent-per-cwt deductions stop at the end of March.

UTILIZATION

Commercial Use Higher

Third-quarter commercial disappearance of all milk and dairy products, on a milk-equivalent, fat-solids basis, was up a healthy 1.4 percent, following a strong

Table 14.--Milk prices received by farmers, by months, 1981-84

Month	All sold to plants				Manufacturing grade			
	1981	1982	1983	1984	1981	1982	1983	1984
	Dollars per cwt							
January	14.10	14.00	13.90	13.60	13.00	13.00	12.90	12.50
February	14.00	13.80	13.80	13.40	12.90	12.80	12.80	12.40
March	13.80	13.70	13.60	13.20	12.80	12.70	12.70	12.30
April	13.70	13.50	13.60	13.10	12.70	12.60	12.70	12.30
May	13.50	13.20	13.30	13.00	12.60	12.40	12.50	12.10
June	13.40	13.20	13.20	12.80	12.50	12.30	12.40	12.00
July	13.40	13.20	13.20	12.90	12.40	12.30	12.30	12.10
August	13.50	13.30	13.30	13.10	12.40	12.30	12.20	12.10
September	13.70	13.60	13.50	13.60	12.60	12.60	12.50	12.70
October	14.00	13.80	13.80	14.00	12.90	12.90	12.90	13.00
November	14.00	13.90	13.90	14.10	13.00	13.00	13.00	13.00
December	14.00	13.90	13.70		13.00	13.00	12.70	
Average 1/	13.76	13.59	13.57		12.73	12.66	12.60	

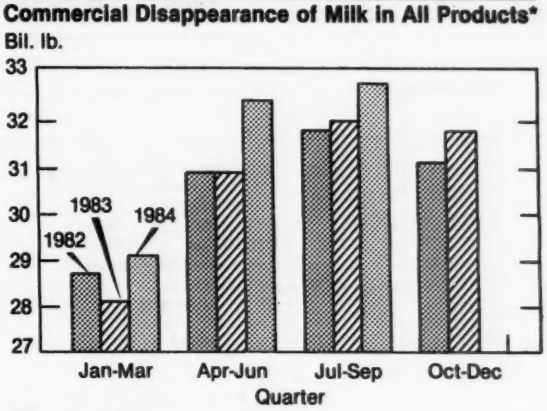
1/ Simple average of reported monthly prices.

Table 15.--Production of selected manufactured dairy products

Item	Jan.-Oct. 1983	Jan.-Oct. 1984 1/	Change
	Million pounds		Percent
Butter	1,091.5	941.4	-13.8
Cheese			
American	2,473.0	2,295.9	-7.2
Other	1,541.8	1,628.5	+5.6
Creamed cottage	630.3	623.7	-1.0
Canned milk	570.8	529.5	-7.2
Dry whole milk	90.8	101.2	+11.5
Ice cream (gal)	759.4	759.2	-0.0
Milk equivalent 2/	70,072.0	65,567.0	-6.4
Nonfat dry milk	1,289.4	1,031.9	-20.0

1/ Preliminary. 2/ Total reported manufactured products on a fat-solids basis.

Commercial Disappearance of Milk in All Products*



*Milk equivalent.

USDA

first-half gain of 4 percent. For January-September, commercial disappearance was up 2.8 billion pounds, 3 percent. Preliminary data for October indicate a gain of 0.4 percent. For all of 1984, sales are expected to be up about 3 percent. In 1985, commercial disappearance of all dairy products is projected to be up 1 to 4 percent because of additional population, larger per capita incomes, lower real prices of dairy products, and the national dairy promotion program.

A comparison of January-October commercial sales of major dairy products with a year earlier shows that butter was up 8 percent, American-type cheese 11 percent, cheese other than American types 8 percent, frozen dairy products 0.8 percent, fluid products about 1 percent, and nonfat dry milk 17 percent. Meanwhile, canned milk was down 9 percent.

CCC Stocks Lower

Total dairy product stocks held by the Government on November 1 were 14.2 billion

Table 16.--Wisconsin out-of-State milk shipments

Month	1982 1/		1983 1/		1984 1/	
	Loads	Volume	Loads 2/	Volume 3/	Loads 2/	Volume 3/
	Number	Thousand pounds	Number	Thousand pounds	Number	Thousand pounds
January	57	2,679	13	611	44	2,156
February	31	1,457	7	329	42	2,058
March	20	940	1	47	64	3,136
April	7	329	1	47	75	3,675
May	15	705	9	423	35	1,715
June	22	1,034	3	141	148	7,252
July	25	1,175	28	1,372	71	3,479
August	23	1,081	62	3,038	236	11,564
September	68	3,196	258	12,642	484	23,716
October	20	940	57	2,793	486	23,814
November	50	2,350	54	2,646	447	21,903
December	14	658	50	2,450		
Total	352	16,544	543	26,539		

1/ Changes in marketing practices in the Chicago market and adjacent Federal order markets may affect the comparability of these data. 2/ Includes out-of-State skim milk shipments. 3/ Average weight of load increased from 47,000 pounds to 49,000 after July 1, 1983.

Table 17.--Dairy sales, January-October, 1983-84

Item	1983	1984	Change
	Million pounds		Percent
Total milk 1/	101,700.0	104,534.0	+2.8
Manufactured products:			
American cheese	1,726.0	1,918.9	11.2
Other cheese	1,720.6	1,854.1	7.8
Cottage cheese 2/	816.1	820.1	+0.5
Butter	702.1	756.0	+7.7
Ice cream	3,644.9	3,644.3	-0.0
Ice milk	1,435.1	1,490.3	+3.8
Canned milk	527.5	479.7	-9.1
Nonfat dry milk	380.6	446.5	+17.3
Fluid products 3/			
Whole milk	14,181	13,831	-2.4
Skim and lowfat milk	11,942	12,523	+4.8

1/ Milk-equivalent, fat-solids basis. 2/ Creamed and low-fat. 3/ January-September based on Federal order data, percent change adjusted for calendar composition and seasonality.

Table 18.--Commercial disappearance: Total milk, annual and quarters, 1982-84 1/

Item	1982			1983					1984 2/		
	Quarters			Quarters					Quarters		
	III	IV	Total	I	II	III	IV	Total	I	II	III
	Billion pounds										
Production	34.0	32.9	135.8	34.2	36.9	35.0	33.8	140.0	34.1	35.8	33.6
Farm use	.6	.6	2.4	.6	.6	.6	.6	2.3	1.2	1.0	1.5
Marketings	33.4	32.3	133.4	33.7	36.3	34.4	33.2	137.6	33.0	34.8	32.2
Beginning commercial stocks	5.0	4.6	5.4	4.6	5.2	5.3	5.2	4.6	5.2	5.3	5.6
Imports	.6	.9	2.5	.6	.5	.6	.9	2.6	.6	.6	.7
Total supply	39.0	37.7	141.3	38.9	42.0	40.3	39.3	144.8	38.8	40.7	38.5
Ending commercial stocks	4.6	4.6	4.6	5.2	5.3	5.2	5.2	5.2	5.3	5.6	5.2
Net removals	2.6	2.1	14.3	5.6	5.8	3.1	2.3	16.8	4.5	2.8	.8
Commercial disappearance (actual)	31.8	31.1	122.4	28.1	30.9	32.0	31.8	122.8	29.0	32.4	32.5
Percent change 3/	+0.2	+1.6	+1.6	-2.1	-0.0	+0.8	+2.3	+0.3	4/+1.9	+4.7	+1.4

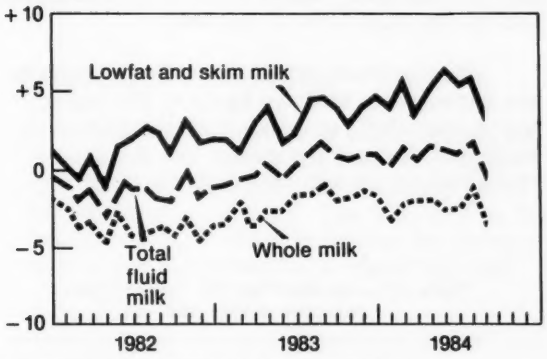
1/ Milk-equivalent, fat-solids basis. Totals may not add because of rounding. 2/ Preliminary. 3/ From year earlier, using unrounded data. 4/ On a daily average basis.

Table 19.--Commercial disappearance: Selected manufactured dairy products, 1978-84 1/

Year and quarter	Butter 2/	Cheese		Nonfat dry milk	Canned milk	Frozen products 4/
		American 3/	Other			
	Million pounds					Million gallons
1978	903.5	2,064.7	1,655.5	658.4	776.1	1,173.5
1979	895.0	2,113.1	1,730.4	603.1	773.7	1,152.1
1980	878.8	2,023.9	1,827.9	538.9	732.5	1,166.9
1981	869.2	2,147.9	1,875.6	464.1	750.4	1,167.7
1982-1st Qtr.	211.4	541.3	462.9	105.0	170.6	249.6
2nd Qtr.	217.6	546.1	484.5	75.5	150.1	334.3
3rd Qtr.	217.3	549.4	501.0	147.1	164.7	346.2
4th Qtr.	251.0	528.0	596.2	120.1	230.0	248.1
Total	897.3	2,165.0	2,044.6	447.7	715.3	1,178.2
1983-1st Qtr.	209.5	466.9	494.6	109.6	160.8	264.4
2nd Qtr.	198.6	570.7	508.3	106.4	159.0	340.3
3rd Qtr.	217.0	500.2	521.1	122.4	144.5	366.4
4th Qtr.	256.6	545.4	609.4	121.6	221.4	250.1
Total 5/	881.7	2,083.2	2,133.3	459.9	685.8	1,221.3
1984-1st Qtr. 5/	200.3	557.6	527.4	137.0	134.7	271.1
2nd Qtr.	243.8	591.9	544.4	116.7	136.2	349.2
3rd Qtr.	217.7	575.6	568.4	147.5	141.9	354.9

1/ Total may not add because of rounding. 2/ Imports include butter-equivalent of butteroil. 3/ Imports include Colby cheese; stocks do not include processed cheese. 4/ Excludes Mellorine. 5/ Preliminary.

Daily Average Sales of Fluid Milk Items



*From year earlier. Adjusted for calendar composition.

USDA

pounds (milk-equivalent, fat-solids basis), a decrease of 4 billion (22 percent) from a year earlier. Government holdings of cold-storage butter and American cheese were 148 and 99 million pounds below a year earlier, respectively. Meanwhile, stocks held by the trade on November 1, at 4.9 billion pounds, were down 0.3 billion from last year. Government-owned stocks have declined since June because CCC program use was larger than net removals from the market.

Table 20.--Dairy product stocks, November 1, 1983-84

Item	1983	1984
	Million pounds	
Commercial:		
Butter	36.7	32.1
American cheese	365.5	339.1
Other cheese	103.8	100.7
Nonfat dry milk	67.9	42.9
Milkfat	187.4	175.4
Solids-not-fat	225.7	195.4
Milk-equivalent, fat-solids basis	5,280.2	4,938.8
Government:		
Butter	487.2	339.3
American cheese 1/	828.7	729.7
Nonfat dry milk	1,337.2	1,248.7
Milkfat	659.2	508.1
Solids-not-fat	1,541.8	1,426.2
Milk-equivalent, fat-solids basis 1/	18,251.0	14,218.3

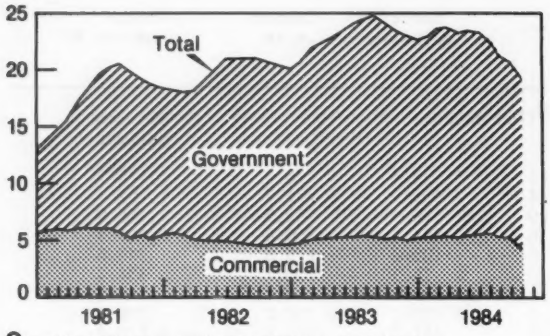
1/ Includes processed American cheese stocks held by CCC.

CCC Purchases Sharply Lower

USDA net removals (delivery basis) of dairy products under the price support program during January-November equaled 8.1

Dairy Product Stocks ○

Bil. lb.*



○As of first of month. *Milk equivalent, fat solids basis.

USDA

billion pounds of milk (fat-solids basis), down 7.8 billion (49 percent) from the same period in 1983. Since August, CCC purchases have been about 20 percent of year-earlier levels, but they have been larger in recent weeks. Government purchases are being reduced because commercial disappearance and farm use are larger, while milk production is lower. For calendar 1984, CCC net purchases are expected to total about 8.5 billion pounds, compared with 16.8 billion in 1983. In 1985, CCC net purchases are projected to remain about unchanged from this year's level.

During the 1983/84 marketing year (October-September), CCC net purchases, on a delivery basis, under the dairy price support program equaled 10.3 billion pounds of milk (fat-solids basis), compared with 16.6 billion during the previous marketing year. The purchases totaled 239 million pounds of butter,

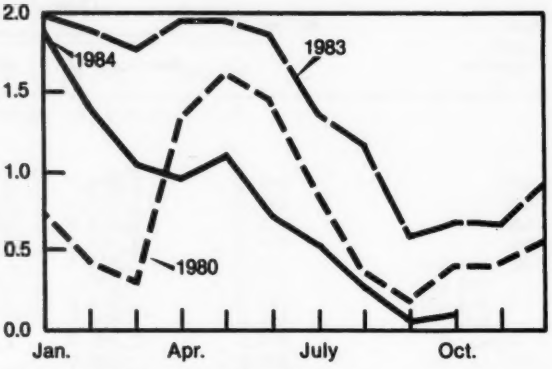
Table 21.—USDA dairy purchases, with comparisons 1/

Item	January-November		
	1983	1984	Change
	Million pounds		Percent
Butter	394.2	192.2	-51.2
American cheese	779.9	429.2	-45.0
Nonfat dry milk	997.8	642.4	-35.6
Evaporated milk	22.0	18.2	-17.3
Milk-equivalent, fat-solids basis	15,893.7	8,048.6	-49.4

1/ Deliveries minus unrestricted sales.

USDA Dairy Product Purchases*

Bil. lbs.



*Net removals, milk equivalent, fat-solids basis.

USDA

542 million pounds of cheese (including 33 million of Mozzarella), and 769 million pounds of nonfat dry milk.

Utilization (commitments basis) of all three products exceeded purchases during the 1983/84 year. As a result, CCC's year-end inventories were reduced considerably; butter down 35 percent, cheese down 15 percent, and nonfat dry milk down 11 percent.

Uncommitted stocks of all three products are expected to be down again at the end of September 1985, as utilization is expected to be larger than net purchases, but the remaining levels will be relatively large.

Table 22.—Uncommitted CCC inventories, selected dates, 1981-84

Date	Butter	American cheese	Nonfat dry milk	Milk-equivalent, fat-solids basis
	Million pounds			Billion pounds
Dec. 1, 1981	205.7	553.6	843.9	9.7
Dec. 1, 1982	378.4	786.0	1,216.5	15.6
Dec. 1, 1983	363.1	853.9	1,365.7	15.9
Jan. 1, 1984	341.7	838.3	1,372.3	15.3
April 1, 1984	354.4	858.0	1,376.0	15.8
July 1, 1984	340.1	868.9	1,377.2	15.6
Aug. 1, 1984	300.6	867.6	1,376.0	14.8
Sept. 1, 1984	254.4	813.0	1,246.1	13.3
Dec. 1, 1984	213.5	633.5	1,139.3	10.7

Table 23.--Dairy products removed from the commercial market by USDA programs, marketing years, 1970-83 1/

Marketing year 2/	Net removals 3/						Solids content of removals			
	Butter 4/	Cheddar cheese	Dry whole milk	Evaporated milk	Nonfat dry milk 5/	Milk equivalent	Milk-fat	Solids-not-fat	As a percentage of marketings	
									Milk-fat	Solids-not fat
	Million pounds					Bil. lb	Million pounds		Percent	
1970	305.4	56.8		79.0	452.3	7.2	273.5	469.9	6.6	4.9
1971	262.4	87.0	0.6	102.0	463.5	6.6	250.7	494.1	5.9	5.0
1972	220.2	20.1	1.5	81.2	259.9	5.0	192.4	274.1	4.5	2.8
1973	26.1	4.9	3.4	50.0	41.6	.7	27.7	53.2	.7	.6
1974	66.9	93.5	.9	33.7	393.6	2.4	89.6	414.8	2.2	4.3
1975	26.1	33.3		24.5	274.8	.9	35.6	279.3	.9	2.9
1976	114.9	96.9		16.5	186.4	3.4	126.3	213.3	2.9	2.1
1977 6/	133.9	87.4		9.7	345.5	3.6	139.1	362.4		
1977	134.6	41.6		17.4	338.5	3.2	125.5	342.9	2.9	3.4
1978	46.2	12.1		17.4	202.5	1.1	43.9	202.1	1.0	2.0
1979	233.0	335.6		15.4	592.2	8.2	301.0	678.2	6.6	6.3
1980	382.1	532.1		20.2	786.9	12.7	465.4	928.1	9.9	8.3
1981	381.9	598.6		19.5	948.8	13.8	508.4	1,104.4	10.5	9.7
1982 7/	410.3	820.3		22.4	1,047.2	16.6	603.5	1,268.2	12.1	10.9
1983 7/	239.4	542.0		23.7	769.1	10.3	374.5	913.5	7.5	7.7

1/ For earlier years see DS-387, December 1981, table 10. 2/ Start of marketing year April 1, 1965-77, October 1, 1977 to present. 3/ Delivery basis after domestic unrestricted sales. Includes purchases of butter, cheese, evaporated milk, and nonfat dry milk under Section 709 and Section 4(a). 4/ Includes butter equivalent of anhydrous milk-fat and payment-in-kind (PIK) purchases. 5/ Includes PIK certificates issued; beginning January 1972, also includes Title I exports originating from private stocks. 6/ April-September transition period. 7/ Preliminary.

Dairy Support Costs Lower

There are a number of ways to compute the cost of the dairy price support program (see DS-385, June 1981, for a description of two different methods). One is to look at the taxpayer's cost, which is derived by adding the cost of net purchases for a marketing year, reducing the total for any deductions, and then adding on diversion payments. Under this method, the costs in 1982/83 were about $2.6 billion, up 16 percent from a year earlier. In 1983/84, costs dropped to about $1.6 billion and are projected to be about the same in 1984/85.

Table 24.--Net Government expenditures on dairy support and related programs, fiscal years, 1950-84

Year beginning July 1	Net support purchases 1/	Military milk 2/	Section 32 3/	Section 709 4/	Section 4(a) 4/	Export assist-ance 5/	Total (excluding special milk)	Special milk program 6/
				Million dollars				
1949-50	170.5	---	17.6	---	---	---	188.1	---
1950-51	7/ -49.1	---	8/ -.9	---	---	---	7/ -50.1	---
1951-52	1.6	---	7.5	---	---	---	9.1	---
1952-53	274.9	---	25.1	---	---	---	300.0	---
1953-54	400.4	---	74.0	---	---	---	474.4	---
1954-55	228.7	4.3	24.4	---	---	---	257.4	22.2
1955-56	237.9	7.3	39.0	---	---	---	284.2	48.2
1956-57	239.1	16.4	75.6	---	---	---	331.1	61.0
1957-58	205.9	30.4	123.7	---	---	---	360.0	66.7
1958-59	102.1	23.0	106.2	---	---	---	231.2	74.7
1959-60	159.5	23.6	35.1	---	---	---	218.2	81.2
1960-61	173.9	25.3	82.1	---	---	---	281.3	87.0
1961-62	539.0	25.9	47.1	---	---	---	612.0	91.7
1962-63	454.0	24.8	---	---	---	6.7	485.5	93.7
1963-64	311.7	26.5	4.4	---	---	36.5	379.1	97.1
1964-651	157.2	26.2	105.6	---	---	44.7	333.7	86.5
1965-66	26.1	---	38.7	---	---	3.8	68.6	97.0
1966-67	283.9	---	.9	14.2	---	18.4	317.4	96.1
1967-68	357.1	---	---	---	---	7.1	364.2	103.1
1968-69	268.8	---	45.4	---	---	13.1	327.3	101.9
1969-70	168.6	---	107.1	7.8	---	7.4	290.9	102.9
1970-71	315.4	---	91.6	3.2	---	11.6	421.8	91.8
1971-72	267.0	---	63.9	---	---	7.3	338.2	93.6
1972-73	135.8	---	15.4	0.1	---	1.5	152.8	90.8
1973-74	31.4	---	10.8	13.7	15.0	---	70.9	50.2
1974-75	485.8	---	6.5	---	3.8	---	496.1	122.9
1975-76	69.6	---	4.1	---	2.8	---	76.5	144.0
Transition quarter 9/	43.5	---	1.0	---	---	---	44.5	25.5
1976-77	709.8	---	---	---	4.5	---	714.3	109.7
1977-78	446.4	---	---	---	5.0	---	451.4	137.8
1978-79	244.3	---	---	---	6.3	---	250.6	134.1
1979-80	1,274.0	---	---	---	5.8	---	1,279.8	156.8
1980-81	1,967.2	---	---	---	7.5	---	1,974.7	118.8
1981-82	2,231.3	---	---	---	7.9	---	2,239.2	28.1
1982-83	10/ 2,592.0	---	---	---	8.4	---	2,600.4	18.0
1983-84	10/ 1,588.1	---	---	---	9.4	---	1,597.5	11/ 17.0

1/ CCC support purchases and related costs (for processing, packaging, transporting, and storing) of dairy products, less proceeds from sales to commercial buyers for domestic use and for export, U.S. military agencies, foreign government and private welfare agencies, and Section 32 programs. 2/ CCC reimbursements to U.S. military agencies, Veterans' Administration and other participants. 3/ Expenditures of Section 32 funds to buy dairy products in the market and from CCC for school lunch and welfare uses. 4/ Purchases of dairy products at market prices under Section 709 of the Food and Agriculture Act of 1973, for domestic school lunch and welfare uses. 5/ Value of payment-in-kind certificates issued by CCC on exports of nonfat dry milk, butter, and other high-milkfat products, and CCC cost of exports under Title I, P.L. 480 of dairy products not originating in CCC stocks. 6/ Expenditures under the program to increase milk consumption by children in schools, child-care centers, and similar institutions. 7/ Net receipt due to sales exceeding purchases. 8/ Receipt due to adjustment. 9/ Start of fiscal year moved to October 1 in 1976. 10/ Milk marketing deductions reduced expenditures $253.8 million in FY 1983 and $481.0 million in FY 1984. 11/ Preliminary.

Source: Agricultural Stabilization and Conservation Service, USDA.

Table 25.—USDA expenditures for dairy products, fiscal year ending September 30, 1984

Item	Value							Quantity			
	Butter and butter products	Cheese		Nonfat dry milk	Condensed and evaporated milk	Milk deductions collected	Total	Butter and butter products	Cheese		Nonfat dry milk
		American	Moz.						American	Moz.	
	Million dollars							Million pounds			
CCC outlays											
Purchases	360.0	844.1	48.1	731.0			1,983.2	248.1	586.3	36.4	787.5
Storage, handling	19.4	41.4	—	18.5			79.3				
Transportation	15.3	34.7	—	27.1			77.1				
Processing, packaging	1/ 84.8	75.5	—	14.0			174.3				
Total carrying charges	119.5	151.6	—	59.6			330.7				
Refunds	—	—	—	—		2/ 15.9	15.9				
Diversion payments	—	—	—	—		335.5	335.5				
Total outlays	479.5	995.7	48.1	790.6		351.4	2,665.3				
Proceeds											
Dollar Sales	28.7	57.5	—	81.3			167.5	34.1	47.0	—	184.4
Military and Barter sales	5.2	0.4	—	9.1			14.7	6.8	1.0	—	28.8
P.L. 480, Title II	0.3	0.5	—	16.3			17.1	6.8	10.1	—	324.3
Transferred to CSM-WSM	—	—	—	3/ 54.3			54.3	—	—	—	58.8
Transferred to butteroil	1/ 59.9	—	—	—			59.9	34.5	—	—	—
Other receipts	1.7	9.4	—	5.8			16.9	0.7	3.0	—	4.8
Milk marketing deductions	—	—	—	—		832.4	832.4				
Total	95.8	67.8	—	166.8		832.4	1,162.8	82.9	61.1	—	601.1
Expenditures											
CCC net expenditures	383.7	927.9	48.1	623.8		(481.0)	1,502.5				
Section 4(a)	—	—	—	—	9.4		9.4				
P.L. 480, Title II	0.6	0.8	—	4/ 24.0	—		25.4				
Unrecovered cost transferred to CSM-WSM	—	—	—	60.2	—		60.2				
USDA net expenditures	384.3	928.7	48.1	708.0	9.4	(481.0)	1,597.5				

1/ Includes $59.9 million cost of butter used in the manufacture of butteroil. 2/ Amount refunded to qualified producers on the two 50-cent deductions authorized under the Reconciliation Act of 1982. 3/ Includes $40.1 million cost of NDM used in the manufacture of CSM and WSM. 4/ Includes $2.9 million Title II NDM sales proceeds included in CSM and WSM.

Source: Agricultural Stabilization and Conservation Service, USDA.

Table 26.--Commodity Credit Corporation, net realized losses (expense) and net expenditures for dairy price support, fiscal 1983 and 1984

Item	Fiscal 1983		Fiscal 1984	
	Expense	Outlays	Expense	Outlays
		1,000 dollars		
Expense/gross outlay:				
Purchases		2,716,025		1,983,159
Storage and handling	79,209	79,209	79,302	79,302
Transportation	70,102	70,102	77,084	77,084
Processing and packaging		74,564		114,101
Sales (cost basis)	612,936		671,311	
Domestic donations (cost basis)	1,349,143		1,228,080	
Export donations (cost basis)	10,688		260,567	
Other expense or outlays	32,006	32,006	76,117	76,117
Diversion payments			335,552	335,552
Subtotal	2,154,064	2,971,906	2,728,013	2,665,315
	Income	Receipts	Income	Receipts
Offsetting income/receipts:				
Proceeds from sales to blended foods	-118,516	-118,516	-215,150	-215,150 Net transfers
		-40,058		-54,306
Other income or receipts	-31,375	-31,375	-60,951	-60,951
Milk marketing fees collected	-253,849	253,849	-832,447	-832,447
Subtotal	-403,740	-443,798	-1,108,548	-1,162,854
Net realized loss or net expenditures	1,750,324	2,528,108	1,619,465	1,502,461

Note: Expense items minus income items equal net realized loss (expense concept), and gross outlay items minus receipt items equal net expenditures (expenditure concept).

Source: Agricultural Stabilization and Conservation Service, USDA.

FOREIGN TRADE AND TRENDS

Imports Remain Larger

Imports of dairy products during January-October 1984, on a milk-equivalent, fat-solids basis, rose 9 percent from the same period in 1983. Total cheese imports (product-weight basis) were up 10 percent, quota-types were up 7 percent, and nonquota types increased 26 percent. Casein (milk protein) imports were up 19 percent, while lactose (milk sugar) was up 28 percent.

Exports of milk and dairy products (fat-solids basis) during January-September equaled about 2.4 billion pounds of milk, 57 percent above a year earlier. Meanwhile, shipments during the first 9 months of 1984 were about 500 million pounds, up 18 percent from a year earlier.

Exports are likely to remain above year-earlier levels in 1985 due in part to a recent sale of butter, butteroil, and processed cheese to Egypt. The sales prices were $1,310 per metric ton for butter, $1,360 for butteroil, and $1,195 for processed cheese. Each price includes stowage and is above the General Agreement on Tariffs and Trade (GATT) minimums.

On Friday, December 14, 1984, the United States notified the Director-General of the GATT that it was withdrawing from the GATT's International Dairy Arrangement (IDA) in 60 days. One of the primary objectives of the IDA is to set minimun export

Table 27--Dairy products: U.S. imports, quota and nonquota, total 1983 and January-October, 1983-84 1/

Product	Calendar year quota	1983 imports	October			Cumulative, January-October		
			1983	1984	1984 as a % of 1983	1983	1984	1984 as a % of 1983
	Thousand pounds				Percent	Thousand pounds		Percent
Cheese, quota types								
American								
-cheddar	12,205.3	4/ 12,746	1,425	599	42	10,601	8,967	85
-other	7,545.4	8,909	603	719	119	7,055	4/ 8,670	123
Italian								
-original loaves	12,374.4	12,121	647	1,430	221	9,315	10,384	111
-other	1,550.0	1,537	17	119	700	1,062	1,388	131
Edam and Gouda								
-natural	9,208.6	8,967	1,004	1,186	118	6,666	6,849	103
-processed	3,151.3	3,077	791	408	52	2,161	2,629	122
Blue mold	5,469.6	4/ 5,603	458	682	149	4,933	4,177	85
Swiss								
-Emmenthaler	70,278.1	68,441	5,770	124	124	54,526	54,787	100
-Gruyere process	16,479.0	15,693	1,484	1,577	106	12,764	12,987	102
Other								
-over 0.5% fat	89,466.8	4/ 90,417	8,114	8,330	103	62,691	72,120	115
-under 0.5% fat	12,621.1	12,145	1,071	724	68	8,159	9,089	111
Total	240,349.6	239,656	21,386	22,905	107	179,933	192,046	107
Cheese, nonquota types								
Other cow's milk cheeses 2/		18,399	1,717	2,427	141	14,054	18,651	133
Miscellaneous 3/		1,479	162	236	146	1,188	1,734	146
Pecorino		25,703	2,417	2,284	94	21,343	25,343	120
Roquefort		1,010	81	71	88	824	824	113
Total		46,591	4,376	5,018	115	37,408	37,408	126
Total cheese,								
Quota and nonquota	240,349.6	286,247	25,762	27,923	108	217,342	239,069	110
Other quota products								
Butter	707.0	4/ 1,724	168	216	129	4/ 1,363	4/1,484	109
Butteroil	1,200.0	1,200	0	0	0	1,200	1,200	100
Butterfat mixtures	2,580.0	2,334	35	240	686	72	2,398	5/
Ice cream	3,377.3	0	0	0	0	0	130	5/
Frozen cream	12,540.0	4/14,179	1,944	1,212	62	9,974	8,975	90
Nonfat dry milk	1,807.0	4/ 2,399	100	240	240	1,575	1,435	91
Dried buttermilk and whey	496.0	400	0	47	5/	160	83	52
Evaporated milk	1,312.0	4/ 7,181	668	615	92	4/ 6,080	4/ 5,278	87
Condensed milk	4,079.0	3,763	34	794	5/	731	4,040	553
Chocolate crumb								
-regular	21,409.2	16,240	832	728	87	14,402	11,284	78
-lowfat	4,680.0	1,252	120	0	6/	1,252	28	2
Animal feed with milk solids	16,300.0	15,060	768	989	129	13,585	13,556	100
Nonquota products								
Casein		159,527	16,881	18,381	109	130,654	154,845	119
Lactose		1,055	120	131	109	918	1,172	128
Milk-equivalent, fat-solids basis, total all products	2,234,270	4/ 2,615,583	235,665	250,192	106	1,982,925	2,156,734	109

1/ Preliminary. 2/ Primarily soft, ripened cheeses. 3/ Gjetost, Bryndza, Gammelost and Noekkelost, and Goya.
4/ Probable error in reported data. 5/ More than 1,000.

Source: U.S. Department of Commerce, Bureau of the Census.

Table 28.--U.S. dairy trade, 1/
1982-84

Year and quarters	Imports: Cheese	Imports: Other	Exports	Shipments 2/
	Million pounds			
1982				
1st	359	62	1,567	153
2nd	439	126	952	157
3rd	538	43	610	129
4th	792	117	859	163
Year 3/	2,128	349	3,988	602
1983				
1st	512	121	508	152
2nd	493	45	623	158
3rd	532	44	379	130
4th	736	132	614	136
Year 3/	2,273	343	2,124	577
1984				
1st	465	104	487	175
2nd	548	63	827	173
3rd	668	59	1,065	171

1/ Milk-equivalent, fat-solids basis. 2/ To U.S. territories. 3/ May not add because of rounding.

prices for butter and other basic dairy products by participating countries. Following a large sale of surplus butter by the European Community to the Soviet Union, at prices well below GATT minimum levels, the IDA met to consider the problem. A resolution was adopted to authorize the EC sale and permit "other traditional suppliers" to sell butter below the $1,200-per-metric-ton minimum. The United States objected, but did not block adoption of the resolution. Subsequently, U.S. officials have concluded that the EC's sale to the USSR at well below the GATT minimun price has in effect rendered the Arrangement meaningless. To show dissatisfaction with the EC's actions in this and other areas related to trade in agricultural products, the United States has decided to withdrew from membership in the IDA.

World Milk Production Reduced 1/

Cow's milk production for the 38 major producing countries is expected to decline slightly (0.3 percent) in 1984. Government programs to reduce milk production in the EC and the United States are largely responsible for the drop, as declines in the U.S. and EC production more than offset increases in Oceania, Poland, and the USSR. In 1985, world milk production is expected to be nearly unchanged from 1984. More milk is projected for the Soviet Union, India, and the United States next year. The EC is expected to again reduce production.

The lower EC production forecast for this year and next is because of the quota system enacted for 1984/85 and the following 4 years. Milk production is likely to drop about 2.3 percent this year and a similar drop may occur next year. Farmers in the EC are adjusting by sending cows to slaughter and reducing yields by feeding less concentrates.

New Zealand's milk production was up sharply in 1984 as increasing dairy cow numbers, together with a very favorable pasture season, resulted in record output. Milk output in 1985, will likely continue large. Feed and forage conditions continue favorable.

Australian milk output rose substantially in 1984 as pasture conditions were favorable. For 1985, production may decline slightly due to decreasing cow numbers. The drop in production will likely be moderated as weather and pasture conditions are good.

Soviet Union milk production during 1984 is expected to be less than 1 percent above a year earlier. While first-half output was up more than this amount, a summer drought reduced feed supplies and hurt the quality of forage supplies. For 1985, production is projected to again rise by 1 to 2 percent. The dairy herd is expected to continue to be held at 1984 levels, while output per cow will rise because of better breeding and other technological improvements. However, output for 1985 hinges largely on the quantity and quality of next year's feeds and forage crops.

Butter and Nonfat Dry Milk Supplies Lower

The decline in world milk supplies in 1984 has slowed the manufacture of dairy products. Butter and nonfat dry milk (NDM) production likely declined by about 2 percent and 7

1/ Prepared by William C. Paddock, Livestock and Dairy Division, FAS, USDA, (202) 382-1347.

percent, respectively. Meanwhile, world cheese production likely continued to increase, up about 1 percent, but well below the sharp year-to-year gains of recent years. Butter and NDM output are expected to decline again in 1985, while cheese production rises.

World stocks of cheese and NDM by the end of 1984 are expected to be somewhat lower than a year earlier. Meanwhile, butter stocks are likely to be much larger, with sharp gains in the EC and New Zealand.

World trade in dairy products appears to have increased in 1984 and is likely to rise again in 1985, particularly butter and cheese. However, dairy product prices in international markets have continued weak throughout 1984 and may show little, if any, gain from current levels in 1985 as supplies of all dairy products will be more than ample.

CALIFORNIA AND CANADIAN QUOTA PLANS

by
Richard F. Fallert and Carol A. Goodloe 1/

Abstract: Various types, provisions, and objectives of base and quota systems are discussed. The history and experience under California and Canadian quota systems are presented. In Canada, quotas on fluid and industrial milk deliveries have balanced milk supplies and demand with reasonable success, but the program has generated large direct and indirect costs. The impact of the California quota plan on milk supplies is unclear. Problems related to capitalized base values, increased milk production costs, and restricted resource adjustments are likely to arise if base plans are used to control milk supplies effectively.

Keywords: Milk, pricing, base plans, quota systems, supply control, Canada, marketing

Introduction

History has shown that if farm milk prices are maintained for an extended time at a level substantially higher than supply-demand conditions warrant, excess resources will be attracted into milk production, resulting in milk surpluses. In such situations, other mechanisms can be used along with price to adjust supplies. Currently, quota plans are receiving attention in some segments of the industry as a potential method of milk supply adjustment just as Class I base plans and quota systems were considered in some U.S. markets in the early 1960's and early 1970's.

In recent years, dairy industries in various markets and countries have experienced rather dramatic changes in production and marketing and have mounted efforts to influence milk supplies and use. For example, the European Community (EC), faced with huge dairy surpluses and rising expenditures, instituted milk delivery quotas earlier this year. Canada, which has operated under quota systems at the provincial and national levels for many years, also has had to contend with dairy surpluses during the 1980's. In the United States, California has had a quota plan since 1969. A review of provisions and selected effects of the California and Canadian quota plans should prove useful in determining what problems and adjustments might be expected under alternative quota systems.

1/ Agricultural economists in National Economics Division and International Economics Division, Economic Research Service, USDA; (202) 447-4997 and (202) 447-8378, respectively.

Base and Quota Plans As Supply Control Measures

A base or quota plan gives producers who supplied the market during a designated period a "right" or "franchise" to continue supplying that market. Base plans can be used primarily to affect the distribution of market revenues or to control supplies. To control supplies, specific provisions must be included for limiting entry of new producers, limiting base revisions, and transferring bases. Base plans in U.S. markets (unlike that of Canada) generally have not been intended as supply control measures.

Base or quota plans can range between relative open supply adjustment plans, where producers can earn additional base by producing more than their base, and closed plans where the total base is relatively fixed. In tightly closed plans, producers can obtain more base only by purchasing it from its current owners or by the reassignment of the base of exiting producers. Such bases immediately have a monetary value.

A fairly closed base or quota system is necessary to an effective supply control plan. A supply control plan must also price milk produced outside of quota low enough to make production economically infeasible. A closed base plan might have a much different result in a high-cost, deficit region than in a low-cost, surplus region--even though the plans are essentially the same.

Base and Quota Plans in U.S. Milk Markets

Producer cooperatives have operated various types of base plans on a local market basis since the early part of this century. Several States--primarily in the South in predominantly short-supply areas--have used base or quota plans since the early 1930's. California has operated a quota plan since 1969. Base-excess seasonal pricing plans also have been administered in some markets under the Federal order system since the early 1930's. However, Class I base plans were not authorized in Federal order markets until 1965, when Title I of the Food and Agriculture Act of 1965 amended the Agricultural Marketing Agreement Act of 1937. Under the Agricultural Act of 1970, authority for Class I base plans in Federal order markets was extended and amended, generally providing greater flexibility.

Only the Puget Sound and Georgia Federal milk orders actually used Class I base plans. The Puget Sound plan was in effect from September 1967 until January 1984, when the Puget Sound Federal order was merged with the Inland Empire Federal order. A Class I base plan was in effect in the Georgia Federal milk order from March 1972 until September 1980, when it was replaced by a base-excess seasonal pricing plan. Authority for implementing new Class I base plans under Federal milk marketing orders expired on December 31, 1981, although any plan issued prior to that date could remain in effect until December 31, 1984.

California Quota Plan

California has set its own milk prices since its milk control program was instituted in 1935. It is the major State-regulated milk pricing and marketing system in the Nation. In 1967, the Gonsalves Milk Pooling Act was passed requiring the Director of Agriculture to formulate a milk pooling plan with the assistance of a formulation committee. A plan was developed, producers voted in favor of it, and it became effective July 1, 1969.

This milk pooling plan terminated the individual handler pool system and gave each eligible market milk (Grade A) producer a production base and pool quota that represented his historical share of the California Class I market. The base and quota belonged to the individual producer and could be bought and sold without arbitrary restriction by a third party.

Under the quota system, existing market grade (Grade A) milk producers who had shipping contracts during the 1966 or 1967 base years were allocated a share of the Statewide market based upon the volume they shipped in those years, and the proportion that was Class I. The volume of market milk shipped became the production base of the producer, while the Class I portion plus 10 percent became his quota.

Under the quota system, all classified use in the State is accounted for in reports submitted by distributors. A blend (weighted

average) price is computed based on respective quota, base, and overbase milk. "Base milk" is the difference between a producer's production base and his quota. "Overbase" is any amount of market milk produced and shipped in excess of the production base.

California Grade A producers are paid on the basis of milkfat and solids-not-fat (SNF) rather than the traditional cwt of milk and butterfat differentials. Also, quota fat and quota SNF have a higher value than overbase fat and overbase SNF.

These values can be converted to an approximate cwt equivalent basis by multiplying the fat values by 3.5 (lbs. of fat in 100 lbs. of milk) and the SNF by 8.7. In August 1984, quota milk had a value of $13.49 per cwt and overbase milk reflected a value of $11.79. Primarily because of this difference in value between quota milk and overbase milk, quotas have attained a market value.

In August, quota transfers had an average market value of $938 per pound of fat per day. On a per-cow basis, the average value of quota fat in August was $1,407. Since 1975, quota values have averaged around $1,200 per cow, reaching around $1,500 in 1981.

New producers and producers who expand milk production and are not covered by quota receive the overbase price on overbase milk marketed. Currently, about 14 percent of the producers have no quota and receive the overbase price on all of their milk production. This represents about 8 percent of the total California Grade A milk supply.

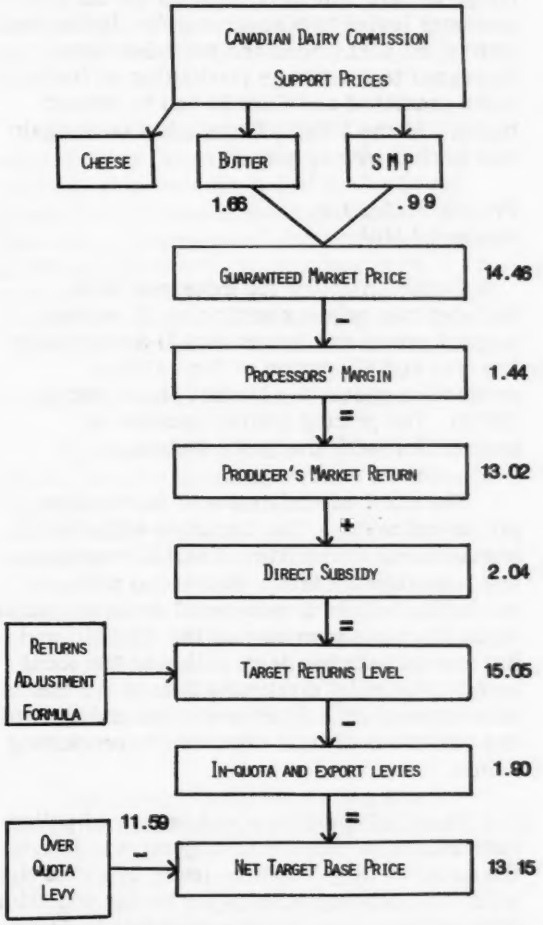
Even under a rather unrestrictive quota system, California experienced over 500 hardship cases with complaints about base and quota allocations, and related problems during the first 30 months of the program. At the time, there were 2,900 producers on the market. With eventual expansion of the quota definition (since Class I sales did not increase as originally anticipated), and other measures to equalize quota among producers, the number of hardship cases declined over time.

Quotas in Canadian Dairy Policy

In Canada, both fluid and industrial (manufacturing) milk is subject to extensive government regulation. Production of industrial milk, which is milk utilized in manufactured dairy products, has been subject to national quotas since 1968. Fluid milk, that which is sold for consumption in liquid form, has been produced under provincial quotas even longer.

Fluid milk, about one-third of total milk production, is under the jurisdiction of the individual provinces and is consumed in the province where produced. Provincial marketing boards or departments of agriculture establish quality standards, assure compliance with sanitary regulations, and set prices. Fluid milk prices are usually set by formula and judgment.

Figure 1. Canadian Pricing for Industrial Milk



Butter and skim milk powder (SMP) prices are in U.S. dollars per pound. Milk prices are U.S. dollars per cwt. The cheese program is not operative, because the support price is below the market price.

Programs affecting the industrial milk sector, accounting for the other two-thirds of production, are administered by the Federal Government because industrial milk products are traded between provinces and internationally.

Over the past 25 years, Canada has faced both surpluses and deficits in dairy products. During the 1960's, butter, cheese, and skim milk powder received varying levels of support under a federal stabilization program. However, surpluses of butter and skim milk powder developed in the mid-1960's and the major concern was to reduce output. The Canadian Dairy Commission (CDC) was created in 1966 to achieve butterfat self-sufficiency and enhance producer returns. The CDC introduced a direct subsidy for producers, but also initiated quotas and producer levies to manage supply. In the early 1970's, support prices and subsidies were increased to encourage production as feed costs escalated and Canada had to import butter. In the 1980's, Canada has once again had to deal with surpluses.

Pricing Policy for Industrial Milk

Canadian policy for industrial milk includes two primary activities: 1) setting support prices and levies, and 2) determining the size and allocation of the national production quota, the Market Share Quota (MSQ). The pricing system operates in conjunction with the quota system.

The CDC administers and determines prices and levies. The Canadian Milk Supply Management Committee (CMSMC) oversees and allocates the MSQ. Provincial milk marketing boards or provincial departments of agriculture are members of the CMSMC and implement national dairy policy at the local level. Provincial marketing boards are the sole buyer of milk from producers and control the quantities of milk allocated to processing plants.

The CDC employs a wide range of policy instruments to achieve its objectives. It sets the national target returns level, operates the offer-to-purchase scheme for butter and skim milk powder, pays monthly subsidies to dairy producers, and collects producer levies. The CDC also exports surplus dairy products, administers other marketing and promotion programs, and funds various research efforts.

The CDC determines the return to milk producers by setting the target returns level (target price). The target price equals the support price plus a direct federal subsidy, minus a processor's margin and producers' levies (figure 1). Since 1975, the target price has been adjusted by the Returns Adjustment Formula, which has 3 components--an index of dairy cash input prices weighted 45 percent, the Consumer Price Index weighted 35 percent, and a judgmental factor weighted 20 percent.

The provincial marketing boards use the target returns level to set industrial milk prices. Producers do not necessarily get the target price because actual prices received and processors' margins vary at the provincial level. Margins are negotiated between the processors and the marketing boards, and take into account local transportation and marketing costs. However, because the CDC's target and support prices act as floor prices for industrial milk, provincial prices necessarily reflect the CDC's prices.

Since June 1982, dairy prices have been subject to a federal wage and price program. Dairy support and target prices are under this restraint until March 1985. Prices continue to be raised three times a year, but increases have been smaller in recent years.

Functions of the CMSMC and The Market Share Quota

The CMSMC determines the MSQ and allocates it among the provinces. The CMSMC is composed of representatives from the provincial milk marketing boards, other provincial governmental agencies, and the CDC.

The MSQ was established in 1970/71 and superseded an earlier quota scheme. Initially only Quebec and Ontario participated, but the remaining provinces entered between 1971 and 1974. (Ontario and Quebec account for about 75 percent of total Canadian milk production.) The CMSMC was created in 1975 to allocate the MSQ among the provinces.

The MSQ is intended to balance milk production with requirements. It includes an

Table 1.--Canadian target prices and producer levies

Year 1/	Target price	Levies		Market share quota
		In-quota	Over-quota	
		Can.$ per hecto-liter		Mil. hecto-liter
1980/81	34.61	2.96	18.16	44.1
1981/82	38.06	3.30	20.21	44.1
1982/83	41.02	4.40	27.95	43.2 2/
1983/84	42.80	5.14	31.79	44.5
1984/85	44.65	6.14	34.38	44.5

1/ Dairy year beginning in August. 2/ Reduced to 42.8 in January 1983.

Note: 1 hectoliter equals 227 pounds.

estimate for domestic requirements (accounting for almost 95 percent of production), the Special Export Program, and a "sleeve." The sleeve is a cushion that balances any excess production in some provinces with under-production in others. The CDC's price support program applies only to production under the MSQ. The direct subsidy is not paid on the sleeve.

The CDC charges levies on producer deliveries to help fund the program and exports of surplus dairy products, primarily skim milk powder and concentrated whole milk. Levies are charged both within and over the MSQ. The over-quota levies are the central element in controlling production. Due to the widening gap between world prices and Canadian support prices, levies have been increased sharply to discourage over-quota production and help pay the costs of subsidized Canadian exports (table 1). These levies correspond roughly to the difference between domestic and international prices and have increased from about 55 percent of the target price to almost 80 percent in recent years.

The quantity of MSQ has remained basically unchanged during the 1980's, due to excessive milk production and occasional dairy product surpluses. Milk production was over quota in both 1981/82 and 1982/83 (August-July), which caused reductions in the MSQ. Even with the small increase in MSQ in 1983/84, the provincial governments did not issue all of the available quota to producers because of concerns about overproduction and the need to increase levy contributions. (Each province is responsible for meeting its share of levies.)

The most difficult issue in dairy policy has been the determination and allocation of MSQ. Provinces are, of course, interested in maintaining or increasing their share of the MSQ. Producer prices have not been as contentious an issue, because they have kept pace with inflation and have been maintained at levels above world prices. Dairy farmers are protected from world competition by import quotas. Thus, the main question has been how to divide a stagnant domestic market among the provinces.

Quota allocations were initially based on a province's share of national production. Quotas cannot be transferred between provinces. This method benefited large milk producing provinces like Ontario and Quebec, but locked smaller provinces into a secondary role.

This problem manifested itself in 1982 when British Columbia dropped out of the national plan because it felt it should be granted an increased share of the MSQ. Because consumption of dairy products is growing only slowly, an increase in MSQ for one province implies a decrease for another. Discussions continue concerning British Columbia's return to the national plan.

Quota Prices and Methods of Transfer

Provincial milk marketing boards set prices for quotas and determine methods of buying and selling quotas. The provinces determine how quotas will be transferred among producers or acquired by new entrants. Provincial authorities can choose not to allocate all of the available MSQ or adjust quotas during the year to even out deliveries. Most provinces set prices and strictly control the transfer of quotas. But in Ontario and Quebec, both fluid and industrial quotas are traded on an exchange.

The Ontario Milk Marketing Board (OMMB), established in 1965, administers both the fluid milk quota (Group I Pool) and the MSQ (Group II Pool). The Group I Pool quota is expressed in pounds of milk per day. Producers must supply milk to the OMMB on a regular basis. Their quota can be reduced if

shipments fall below a certain level. Group II Pool quota is allocated in pounds of milk per year.

There are three methods of transferring quota in Ontario: 1) to a member of the immediate family; 2) with the farm as part of a total farm sale; and 3) on the monthly quota exchange. The exchange provides a forum where offers to buy or sell either fluid quota or MSQ are made. A matching of offers results in a "market clearing price," at which quota is bought and sold that month. In 1983/84, only about 8 percent of the total quota in Ontario was exchanged. Approximately 65 percent was transferred within the family, 5 percent through farm sales, and 30 percent on the quota exchange.

The current system of public auction has been in place since March 1980. Between June 1976 and early 1980, quota prices were fixed by the OMMB. Quota prices shot up when the system was implemented, because the OMMB had been holding them unrealistically low (table 2).

Quebec also holds local monthly auctions at which quotas are bought and sold. Separate auctions are held for fluid and industrial quota (MSQ). This system has been in place for about 3 years. Prior to this, prices were fixed and sales of quotas were handled by local producer groups.

The prices in table 2 can be translated into quota costs. For example, if in 1983, an Ontario farmer purchased fluid quota that allowed him to deliver 100 pounds of milk daily for as long as the plan is in existence, his quota cost would be Can.$9,101 (U.S.$7,386).

Table 2.--Prices of traded quotas in Ontario and Quebec

Year	Ontario		Quebec	
	Fluid 1/	MSQ 2/	Fluid 1/	MSQ 2/
	Can.$/lb.			
1979				
June	16.00	.16	52.39	.11
Dec.	16.00	.14	41.45	.05
1980				
June	NA	NA	58.56	.10
Dec.	44.07	.11	67.07	.09
1981				
June	40.99	.13	65.18	.08
Dec.	44.07	.10	69.51	.12
1982				
June	47.79	.12	79.63	.18
Dec.	75.36	.17	127.27	.22
1983 3/	91.01	.28	116.57	.37
1984	103.99 4/	.24 4/	114.59 5/	.33 5/

NA = not available. 1/ Quota based on a daily delivery. 2/ Quota based on an annual delivery. 3/ Annual average. 4/ November. 5/ Average of first three quarters.

If he purchased MSQ to enable delivery of 100 pounds a day, or 36,500 pounds a year, his cost would be Can.$10,220 (U.S.$8,295). For a Quebec farmer, the comparable costs would be Can.$11,459 (U.S.$9,300) for fluid quota and Can.$12,045 (U.S.$9,776) for MSQ.

Costs of Quotas for Ontario And Quebec Producers

Table 3 presents estimated costs of quotas for average size dairy farms in Ontario and Quebec for 1980 and 1983. The estimated costs of either MSQ or fluid quota assume a farmer is delivering all of his milk to only one

Table 3.--Estimated costs of quota for Ontario and Quebec dairy farmers

Province	Avg. herd size	Avg. prod. per cow	Avg. herd prod.	Cost for quota		Quota cost per cow		Quota cost per cwt		Quota cost as a % of cash receipts	
				Fluid	MSQ	Fluid	MSQ	Fluid	MSQ	Fluid	MSQ
	Cows	Pounds		Can.$		Can.$		Can.$		Percent	
Quebec											
1980	33.6	8,862	297,763	51,248	28,287	1,525	842	17.21	9.50	140.2	77.4
1983	35.8	10,083	360,971	113,325	119,120	3,165	3,327	31.39	33.00	184.1	193.5
Ontario											
1980	31.7	9,764 1/	309,519	37,371	34,047	1,179	1,074	12.07	11.00	94.8	86.4
1983	32.4	10,187 1/	330,059	82,298	92,416	2,540	2,852	24.93	28.00	165.2	185.4

1/ National average.

market, whereas in reality a farmer would likely deliver some milk to both markets. (About 93 percent of Ontario's dairy farmers are fully integrated into the fluid/industrial market, but only 60 percent of Quebec's farmers are.) The costs per cwt compare to a target price for milk of Can.$15.25 (U.S.$13.04) in 1980 and Can.$18.86 (U.S.$15.31) in 1983. These costs depend on the size and productivity of the herd and would vary greatly between producers.

In 1980, fluid quotas were valued higher than MSQ, but the situation reversed by 1983. Prices for MSQ have increased faster than fluid quota prices, reflecting several factors. Since 1980, the quantity of MSQ has declined about 3 percent, and prices for MSQ in Ontario and Quebec have more than doubled. In addition, increasingly high over-quota levies, because of a widening gap between Canadian prices and world prices, have made over-quota production unprofitable and put growing pressure on farmers to acquire additional MSQ.

Costs Associated with National and Provincial Dairy Quotas

Canadian dairy policy has stabilized output and returns to dairy farmers. Stocks have been controlled with reasonable success. But there are large direct and indirect costs associated with this stability.

Dairy accounts for the largest share of federal expenditures on agriculture. The direct subsidy equals about Can.$300 million a year. There are also costs of exporting surplus dairy products, even though producer levies cover some of these expenditures. By maintaining support prices above world prices and restricting imports, income has transferred from consumers to producers. Perhaps most importantly, the "capitalization" of both fluid and industrial milk quotas has contributed to a higher cost structure for the entire dairy industry.

As over-quota levies increased and the demand for MSQ grew, the resulting higher prices for MSQ contributed to substantial income gains for sellers of MSQ. If the Quebec farmer in table 2 acquired MSQ in 1980 for Can.$28,287 that allowed delivery of 297,763 pounds, the same MSQ could have been sold for Can.$119,120 in 1983--a return of more than 300 percent on the investment. These windfall gains have led to great concern about capitalization of quota values, even though only a small share of available quotas change hands.

Several Canadian studies have tried to estimate the value of quotas 2/. One estimate for the late 1970's put the total value of fluid and industrial quotas equal to 25 percent of the value of total dairy product sales. Other estimates show that during the 1970's and early 1980's, holders of fluid and industrial quota received an income transfer equal to 15-20 percent of dairy cash income.

Summary

Over the past 20 years, U.S. interest in supply management systems ebbed and waned as milk surpluses and shortages developed. Base or quota plans that allocate a given market among producers can range between the relatively open supply adjustment plans and closed supply control plans. To control supplies effectively if prices are maintained above market-clearing levels, there must be specific provisions for limiting entry of new producers, limiting base and quota revisions, and transferring bases and quotas.

The California quota plan was designed more as a way of preserving the Class I market for existing producers than as a supply control mechanism. In fact, milk supplies have grown faster in California in recent years than in most areas of the country even though the marginal value of milk is the Class IV (manufacturing milk or overbase) price. The overall impact of the system on milk supplies is unclear.

In Canada, quotas on fluid and industrial milk deliveries have balanced milk supplies and demand with reasonable success, but the program has generated large direct and indirect costs in the form of capitalized quota values, increased milk production costs,

---

2/ Josling, T. E. "Intervention and Regulation in Canadian Agriculture: An Aggregate View of Costs and Benefits." Economic Council of Canada, Ottawa, May 1980. Barichello, Richard, R. "The Economics of Canadian Dairy Regulations." Economic Council of Canada, March 1981.

restricted resource adjustments, and income transfers from consumers to producers.

An important tradeoff occurs between use of supply control provisions that are effective at curtailing market supplies and capitalization of base or quota values. The extent to which base or quota plans are used as effective supply control measures appears directly related to the number and degree of problems likely to surface. The magnitude of these potential problems is affected by the extent to which milk prices are supported above levels warranted by supply–demand conditions.

NATIONAL AND REGIONAL COSTS AND RETURNS OF PRODUCING MILK

by

Richard F. Fallert,
Robert McElroy, and
George Frick 1/

Abstract: For 1984, total cash expenses by U.S. dairy farmers may average about $10.73 per cwt of milk, compared with an estimated $10.54 in 1983, $9.86 in 1982, and $9.74 in 1981. After accounting for cash expenses, including the 50–cent deductions per cwt in 1983 and 1984, producers probably will earn $3.70 per cwt, a decline of 44 cents (11 percent) from 1983, $1.10 (23 percent) from 1982, and $1.50 (29 percent) from 1981. Net returns to owned inputs (capital, land, unpaid family labor, management, and risk) are forecast to be $3.61 per cwt in 1984, compared with an estimated $4.15 in 1983, $4.78 in 1982 and $4.99 in 1981.

Keywords: Dairy farmers, production costs, cash expenses, costs and returns, inputs, resources.

The Agriculture and Consumer Protection Act of 1973 directed the Secretary of Agriculture to estimate the annual costs of producing certain major agricultural commodities including milk. To this end, the Economic Research Service (ERS) evaluates costs and returns and publishes the results. The costs and returns estimates are based primarily on an early 1980 survey of 2,095 dairy farmers in the New England region and 19 other States (figure 1) representing about 85 percent of U.S. milk production. Costs and returns for the more recent years are based on the structure of the industry as indicated by the 1980 survey with costs and returns adjusted by data from secondary sources.

1/ Richard Fallert is Section Leader, Dairy Research Section, National Economics Division, Economic Research Service (ERS), USDA, (202) 447–4997; Robert McElroy is an agricultural economist, Economic Indicators and Statistics Branch, ERS, USDA, (202) 447–2317; and George Frick is a lecturer in the Department of Resource Economics and Community Development at the University of New Hampshire (603) 862–1700.

Figure 1

Dairy Production Regions

Upper Midwest
Northeast
Pacific
Corn Belt
Appalachian
Southern Plains
Dairy production regions
States are grouped in production regions according to the practices most prevalent in raising the particular animal. The boundaries of the production regions for one enterprise, therefore, are not necessarily the same as those for another enterprise.

Costs and returns are the weighted average for a region or for the United States and may differ significantly for individual farms for a variety of reasons: Differences in production per cow; climate; management skills; herd size; and prices paid for feed, labor, and other inputs.

Costs and returns for 1984 are estimated for producers not participating in the paid diversion program because operations of this set of producers most closely conform to the operations of prior years. Both the returns and costs per cwt would be higher for participants in the paid diversion program than for nonparticipants. Direct payments for milk not marketed would increase the returns per cwt for participants while fixed costs averaged over reduced marketings would raise average costs per cwt.

National Expenses Up; Returns Lower

Total cash expenses for dairy producers are forecast to average $10.73 per cwt of milk in the United States during 1984, compared with an estimated $10.54 in 1983, $9.86 in 1972, and $9.74 in 1981 (table 4). Preliminary calculations show total variable cash expenses at $8.16 per cwt in 1984, up from $8.02 in 1983, $7.39 in 1982, and $7.45 in 1981. The 50-cent deductions per cwt in 1983 and 1984 are included in both variable and total cash expenses. Feed costs, the largest component, increased in 1983 but leveled off in 1984.

Cash expense estimates are based on the cost structure of the dairy industry in 1979 and changes in input prices since then. There are indications that some dairymen (especially high-cost producers) have made concerted efforts to reduce operating expenses in light of added expenditures and lowered returns resulting from reduced price supports and the 50-cent-per-cwt deductions authorized by Congress in the Omnibus Budget Reconciliation Act of 1982 and the 1983 Dairy and Tobacco Adjustment Act. Thus, cost of production estimates may overstate cash expenses and understate net returns in 1983 and 1984 because estimating procedures do not fully account for changing practices and structural change in the industry since the 1980 survey.

Fixed cash expenses for 1984, likely $2.60 per cwt, were up from $2.52 in 1983, $2.47 in 1982, and $2.29 in 1981. Economic costs, which include a value on production inputs and resources regardless of how much equity the owner has, probably reached $13.75 per cwt in 1984, a rise of 3 percent from $13.40 in 1983.

Gross dairy enterprise receipts from sales of milk, culled cows, calves, and replacements are expected to average $14.43 per cwt of milk sold in 1984, down 25 cents from 1983, 23 cents from 1982 and 51 cents from 1981. The

Table 4. U.S. milk production costs and returns, by selected items

Item	1981	1982	1983 1/	1984 2/
	Dollars per cwt			
Total cash receipts 3/	14.94	14.66	14.68	14.43
Cash expenses				
Variable 4/	7.45	7.39	8.02	8.13
Fixed 5/	2.29	2.47	2.52	2.60
Total	9.74	9.86	10.54	10.73
Receipts less cash expenses	5.20	4.80	4.14	3.70
Capital replacement	1.64	1.57	1.58	1.68
Receipts less cash expenses and replacement	3.56	3.23	2.56	2.02
Economic costs				
Variable expenses 4/	7.45	7.39	8.02	8.13
General farm overhead	.49	.57	.57	.60
Taxes and insurance	.37	.35	.36	.41
Capital replacement	1.64	1.57	1.58	1.68
Allocated returns to owned inputs				
Operating capital (equity)	.15	.12	.10	.09
Other nonland capital	1.10	1.04	.95	1.00
Land	.37	.36	.36	.37
Unpaid labor	1.46	1.51	1.46	1.47
Total economic costs	13.03	12.91	13.40	13.75
Residual to mgmt. and risk	1.91	1.75	1.28	.68
Net returns to owned inputs	4.99	4.78	4.15	3.61

1/ Preliminary. 2/ Forecasts--more precise estimates will be available in 1985. 3/ Does not include receipts from the paid diversion program which are estimated to have averaged 42 cents per cwt on all milk marketed in 1984. 4/ Includes feed, hired labor, fuels and electricity, machinery and building repairs, milk and livestock hauling, marketing, veterinary and medicine, supplies, artifical insemination - - and, in 1983 and 1984, payments under the 50-cent-per-cwt deductions authorized by Congress. 5/ Includes taxes and insurance, general overhead, and interest paid on land and nonland capital.

50-cent deductions are not reflected in the 1983 and 1984 prices, but are included in the estimated variable and total cash expenses. Sales of milk account for about 92 percent of dairy revenue, while sales of culled cows, calves, and dairy replacements account for the remaining 8 percent (table 5).

Given estimated cash expenses of $10.73 per cwt in 1984, dairy farmers are anticipated to receive, on average, a return above cash expenses of $3.70 per cwt (table 4). This is a decline of 44 cents (11 percent) from 1983, $1.10 (23 percent) from 1982 and $1.50 (29 percent) below 1981. After accounting for cash expenses and capital replacement reserves, net returns are estimated at $2.02 per cwt, compared with $2.56 in 1983, $3.61 in 1982, and $3.56 in 1981. Preliminary calculations indicate that net returns to owned inputs (capital, land, unpaid family labor, management, and risk) were $3.61 per cwt in 1984, compared with $4.15 in 1983, $4.78 in 1982 and $4.99 in 1981.

Regional Revenues, Costs, And Returns Vary

Farmers' prices, production costs, and returns to owned inputs varied greatly among

Table 5. Milk production cost and returns, by selected items, by regions and the U.S., 1983 1/

Item	Northeast	Upper Midwest	Corn Belt	Appalachia	Southern Plains	Pacific	All regions 2/
				Dollars per cwt 3/			
Cash Receipts							
Milk	13.86	13.34	13.53	14.10	14.55	13.18	13.60
Cull cows, calves, & replacement sales	1.03	1.30	1.04	.94	.91	.85	1.08
Total cash receipts	14.89	14.64	14.57	15.04	15.46	14.03	14.68
Cash Expenses							
Feed	4.66	3.97	5.15	6.03	6.29	6.22	4.90
Other variable expenses	3.37	2.79	3.29	3.57	3.22	3.05	3.12
Total variable expenses 4/	8.03	6.76	8.44	9.60	9.51	9.27	8.02
Total fixed expenses 5/	2.59	2.68	2.50	2.45	2.29	2.00	2.52
Total cash expenses	10.62	9.44	10.94	12.05	11.80	11.27	10.54
Receipts less cash expenses	4.27	5.20	3.63	2.99	3.66	2.76	4.14
Capital replacement	1.61	1.82	1.85	1.46	1.17	.77	1.58
Receipts less cash expenses and replacement	2.66	3.38	1.78	1.53	2.49	1.99	2.56
Economic Costs							
Variable expenses 4/	8.03	6.76	8.44	9.60	9.51	9.27	8.02
General farm overhead	.63	.69	.51	.50	.38	.33	.57
Taxes and insurance	.35	.41	.42	.32	.24	.16	.36
Capital replacement	1.61	1.82	1.85	1.46	1.17	.77	1.58
Allocated returns to owned inputs:							
Operating capital (equity)	.11	.09	.11	.12	.11	.10	.10
Other nonland capital	.98	1.07	1.09	.91	.64	.67	.95
Land	.27	.41	.69	.50	.21	.06	.36
Unpaid labor	1.58	1.80	1.98	1.19	.74	.40	1.46
Total economic costs	13.56	13.05	15.09	14.60	13.00	11.76	13.40
Residual to management and risk	1.33	1.59	-.52	.44	2.46	2.27	1.28
Net returns to owned inputs	4.27	4.96	3.35	3.16	4.16	3.50	4.15

1/ Preliminary. States within respective regions where dairy farmers were interviewed: Northeast (NY, PA, OH, New England), Upper Midwest (MN, WI, MI, SD), Corn Belt (IN, IV, IA, MO), Appalachia (KY, TN, VA, NC, GA), Southern Plains (TX), Pacific (CA, WA). 2/ Weighted average. 3/ Hundred-weight of milk represents all milk sold and consumed on the farm. 4/ Includes feed, hired labor, fuels and electricity, machinery and building repairs, milk and livestock hauling, marketing, veterinary and medicine, supplies, artificial insemination, and payments under the 50-cent-per-cwt deductions authorized by Congress. 5/ Includes taxes and insurance, general overhead, and interest paid on land and nonland capital.

regions in 1983 (table 5). For example, total cash expenses were as low as $9.44 per cwt in the Upper Midwest and as high as $12.05 in the Appalachian region. Total economic costs were lowest in the Pacific region at $11.76 per cwt and highest in the Corn Belt at $15.09. Net returns to owned inputs were highest in the Upper Midwest and lowest in the Appalachia and Corn Belt regions at $4.96, $3.16, and $3.35, respectively. Residual returns to management and risk were lowest in the Corn Belt (-$0.52 per cwt) and highest in the Southern Plains ($2.46) and Pacific ($2.27) regions. Detailed regional costs and returns projections for 1984 are not yet available.

Returns for Selected Agricultural Enterprises

Cash returns from dairying were as good or better than most other farm enterprises, and more stable over the 1981-1984 period (table 6).

For example, a 40-cow dairy enterprise generated an average yearly return above cash expenses and replacement costs of about $14,000 during 1981-1984. However, a 300-acre corn enterprise generated an average of about $6,000 per year; while returns from a typical hog enterprise marketing 800 hogs per year were an estimated negative $4,300. While these comparisons may give useful information for some purposes, such comparisons of economic well-being should be considered with caution.

Table 6. Returns above cash expenses and replacement costs, selected agricultural enterprises, U.S. average, 1981-84

Enterprise	1981	1982	1983 1/	1984 2/	1981-84 average
			Dollars per cwt		
Livestock enterprises:					
Milk	3.56	3.23	2.56	2.02	2.84
Hogs, farrow-to-finish	-8.10	5.76	-6.53	-.76	-2.41
Fed cattle	-8.65	-2.15	-6.67	-3.17	-5.16
Cow-calf	-11.99	-15.35	-17.27	-14.39	-14.75
Crop enterprises:					
Corn	.47	.01	.36	.53	.34
Soybeans	2.97	1.73	4.66	2.39	2.94
Wheat	.56	.29	.95	.51	.58
Rice	2.28	-.47	.41	.57	.70

1/ Preliminary. 2/ Forecasts--more precise estimates will be available in 1985.

Source: Economic Indicators of the Farm Sector: Costs of Production, 1983. U.S. Dept. Agr., Econ. Res. Serv., July 1984 and Production Cost Highlights, Agricultural Outlook, U.S. Dept. Agr., Econ. Res. Serv., October 1984.

LIST OF TABLES
Special Article Tables

Page	Table	
33	1	Canadian target prices and producer levies
34	2	Prices of traded quotas in Ontario and Quebec
34	3	Estimated costs of quota for Ontario and Quebec dairy farmers
37	4	U.S. milk production costs and returns, by selected items
38	5	Milk production costs and returns, by selected items, by regions and the U.S. 1983
39	6	Returns above cash expenses and replacement costs, selected agricultural enterprises, U.S. average, 1981-84

UNITED STATES DEPARTMENT OF AGRICULTURE
WASHINGTON, D.C. 20250

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

Moving? To change your address send this sheet with label intact, showing new address, to EMS Information, Rm.400-GHI, USDA, Washington, D.C. 20250.

Postage and Fees Paid
United States
Department of Agriculture
AGR-101

FIRST CLASS

LIST OF TABLES (Cont.)

Page	Table	
1	1.	U.S. dairy situation at a glance
6	2.	Milk production, milk per cow, and milk cows on farms, by months, 1981–84, with comparisons
8	3.	Corn, soybean meal, and 16–percent dairy feed ration prices, by months, 1982–84
9	4.	Milk/16–percent feed price relationship, by months, 1981–84
11	5.	Utility cow prices, Omaha, by months, 1981–84
10	6.	U.S. milk production and factors affecting supply, selected years, 1965–84
12	7.	Manufacturing milk: Comparisons of announced support prices and U.S. average market prices paid to producers, marketing years, 1977–84
12	8.	Computations of parity equivalents for U.S. manufacturing milk, per cwt, marketing years 1977–84
13	9.	USDA purchase prices under dairy price–support programs, 1977–84
14	10.	Wholesale dairy product prices and indexes, by months 1981–84
15	11.	Retail price indexes, by months, 1981–84
16	12.	Retail dairy product prices, by months, 1981–84
17	13.	Whole milk: Prices and farm–to–retail spread, 1984
18	14.	Milk prices received by farmers, by month, 1981–84
19	15.	Production of selected manufactured dairy products
19	16.	Wisconsin out–of–state milk shipments
20	17.	Dairy sales, January–October, 1983–84
20	18.	Commercial disappearance: Total milk, annual and quarters 1982–84
21	19.	Commercial disappearance: Selected manufactured dairy products 1978–84
21	20.	Dairy product stocks, November 1, 1983–84
22	21.	USDA dairy purchases, with comparisons
22	22.	Uncommitted CCC inventories, selected dates, 1981–84
23	23.	Dairy products removed from the commercial market by USDA programs, marketing years, 1970–83
24	24.	Net Government expenditures on dairy support and related programs, fiscal years, 1950–84
25	25.	USDA expenditures for dairy products, fiscal year ending September 30, 1984
26	26.	Commodity Credit Corporation, net realized losses (expense) and net expenditures for dairy price support, fiscal 1983 and 1984
27	27.	Dairy products: U.S. imports, quota and nonquota, total 1983 and January–October 1983–84
28	28.	U.S. dairy trade, 1982–84